

Improving Grade Eight Students'
Spelling Performance
with a
Triad Strategy Approach

Tiffany Gallagher (B.A., B.Ed.)

Department of Graduate and Undergraduate
Studies in Education

Submitted in partial fulfillment
of the requirements for the degree of
Master of Education
Faculty of Education, Brock University
St. Catharines, Ontario

May, 1996



Abstract

The purpose of this study was to examine the effects of explicitly teaching a triad of spelling strategies in comparison to traditional methods, to 26 Grade 8 students. The three explicitly taught strategies were error correction (with cloze procedure), imagery and analogy. The traditional instruction method included activities modelled after Grade 8 basal spellers. Students were seen in groups of thirteen for five weekly sessions of forty minutes. All students were pretested, posttested weekly, posttested immediately following the training sessions and posttested one month following the training. The pretest, weekly posttests and immediate posttest were dictated words spelling tests of both the training and transfer words. The one month delayed posttest was a dictated contextual sentence spelling test. Performance scores on the pretest and posttest measures were compared to determine if any differences existed between the two groups using the Dunnett procedure. Results indicated that no significant differences were found between the strategy instruction and the traditional instruction groups for the training words. However, a significant difference favouring the strategy instruction group existed on transfer words at the immediate posttest. On a

secondary analysis of the data this significant difference existed at the delayed posttest. When learning growth was measured from pretest to delayed posttest, the strategy instruction group significantly outperformed the traditional instruction group with respect to correctly spelling transfer items.

Acknowledgments

I would like to acknowledge the assistance that has been given to me by the Faculty of Education at Brock University. The greatest extent of my gratitude is extended to my advisor, Dr. Vera Woloshyn, whose continual support and feedback has been invaluable. I have gleaned a great deal from her experience, knowledge and passion for the pursuit of education.

I wish to also thank the teachers and students of the schools who were involved in this study. The teachers and students were most willing to participate and enthusiastically cooperated to make this study a success.

Finally, I would like to thank my family, friends and colleagues for their interest and unyielding support. Furthermore, I would especially like to thank my husband, Michael, who has been my foundation providing me with the encouragement to keep striving for higher plateaus.

Table of Contents

	Page
Abstract	ii
Acknowledgments	iv
List of Tables	vii
 CHAPTER ONE: THE PROBLEM	 1
Introduction	1
Background of the Problem	1
Statement of Research Questions	3
Importance of the Study	4
Definitions of Terms	5
Scope and Limitations of Study	7
Outline of Remainder of Document	7
 CHAPTER TWO: REVIEW OF RELATED LITERATURE	 9
Introduction	9
Stages of Spelling Development	9
Characteristics of Good versus Poor Spellers	11
Phonemic Awareness and Primary Spelling	15
Spelling Instruction for Older Students	19
Explicit Strategy Instruction and Spelling	21
Error Correction Strategy and Cloze Procedure	26
Imagery Strategy	29
Analogy Strategy	32
Summary	38
Present Study	39
 CHAPTER THREE: METHODOLOGY	 40
Introduction	40
Subjects	40
Materials	40
Pretest and Immediate Posttest	40
Five Weekly Posttests	41
Delayed Posttest	42
Procedure	42
Overview	42
Traditional Spelling Instruction	45
Explicit Strategy Instruction	46
Error Correction Strategy with Cloze Procedure	46
Imagery Strategy	47
Analogy Strategy	48
Data Analysis	49

Limitations	49
Summary	51
CHAPTER FOUR: FINDINGS	53
Introduction	53
Pretest, Immediate Posttest and Delayed Posttest	55
Total Words	55
Training Words	57
Transfer Words	57
Five Weekly Posttests	58
Total Weekly Words	58
Training Weekly Words	60
Transfer Weekly Words	61
Learning Gains from Pretest, to Immediate Posttest, and Delayed Posttest	61
Secondary Analysis	63
Pretest, Total Posttest and Delayed Posttest	65
Total Words	65
Training Words	65
Transfer Words	67
Five Weekly Posttests	67
Total Weekly Words	69
Training Weekly Words	70
Transfer Weekly Words	70
Learning Gains from Pretest, to Immediate Posttest, and Delayed Posttest	71
Summary	73
CHAPTER FIVE: SUMMARY, CONCLUSIONS, IMPLICATIONS	75
Future Research	78
Educational Implications	80
References	83
Appendix A: Parental Consent Form	90
Appendix B: Dictated Word Spelling Test	92
Appendix C: Delayed Sentence Spelling Test	93
Appendix D: Traditional Spelling Exercises	95
Appendix E: Error Correction with Cloze Procedure	97
Appendix F: Imagery Strategy	98
Appendix G: Analogy Strategy	99

List of Tables

	Page
Table 1: Means and Standard Deviations for Pretest, Immediate Posttest and Delayed Dictated Sentence Spelling Tests as a Function of Experimental Condition	56
Table 2: Means and Standard Deviations for Five Weekly Posttests as a Function of Item Type, Time and Experimental Condition	59
Table 3: Means and Standard Deviations for Pretest, Immediate Posttest and Delayed Dictated Sentence Spelling Tests Growth Scores as a Function of Experimental Condition	62
Table 4: Means and Standard Deviations for Pretest, Immediate Posttest and Delayed Dictated Sentence Spelling Tests as a Function of Experimental Condition (Word Families #2 and #4 Removed)	66
Table 5: Means and Standard Deviations for Five Weekly Posttests as a Function of Item Type, Time and Experimental Condition (Word Families #2 and #4 Removed)	68
Table 6: Means and Standard Deviations for Pretest, Immediate Posttest and Delayed Dictated Sentence Spelling Tests Growth Scores as a Function of Experimental Condition (Word Families #2 and #4 Removed)	72

CHAPTER ONE: THE PROBLEM

Introduction

This study examined the effects of explicitly teaching a combination of three instructional strategies on the spelling performances of Grade 8 students: error correction with cloze procedure, imagery, and analogy. The explicit spelling strategy approach was compared to traditional spelling instruction for both immediate and long-term effectiveness.

Background of the Problem

For many decades educators and researchers have been attempting to uncover the mysteries of how students learn to spell. The fruit of their labour have been a body of knowledge that profiles both good and poor spellers and the course of spelling development. The answer, however, to the question of how we might facilitate spelling through instruction is sketchy. Several works have found value in early spelling readiness programs for preschoolers and kindergarten students (e.g., Ball & Blachman, 1991; Byrne & Fielding-Barnsley, 1991; Lundberg, Frost & Petersen, 1988; Tangel & Blachman, 1992). Still other researchers have exposed the benefits of a few

effective spelling learning strategies (e.g., Anderson, 1985; Radebaugh, 1985; Graham & Freeman, 1986; Kernaghan & Woloshyn, 1995). The missing link in solving the mystery is to uncover the formula that balances readiness programs, cognitive development, and the teaching of specific spelling strategies.

The missing entity may be found in a model of teaching that incorporates cognitive strategies and explicit strategy instruction. Cognitive strategies are mental procedures that aid in the performance of very specific tasks. Numerous cognitive strategies may be employed to assist students in reading, problem solving, writing and memorizing (Snyder & Pressley, 1990). One vehicle employed to teach cognitive strategies is explicit instruction. Explicit strategy instruction includes metacognitive information about a strategy's purpose as well as when and where a student should use the strategy. To accomplish a set goal, several strategies may be used in a cooperative fashion. Monitoring this combination of strategies would be an important part of the strategy training.

This study attempted to integrate three cognitive strategies and to explicitly teach them to a population that has been rarely studied in the spelling literature, that is, the intermediate grades. The first strategy was to have students use a cloze

procedure to correct their spelling errors. To internalize their spelling corrections the students then engaged in an imagery strategy. Finally, an analogy strategy was presented as a means of synthesizing word knowledge and facilitating the correct future application of the spelling. The effectiveness of this triad strategy approach to spelling instruction was compared to traditional spelling methods.

Statement of Research Questions

It was expected that explicitly teaching Grade 8 students a triad of spelling strategies would generally improve their spelling performances relative to their peers receiving traditional spelling instruction. Specifically, it was expected that strategy students would outperform their peers for the spelling of training words as measured by an immediate spelling dictation posttest and a delayed sentence dictation posttest. However, because students often experience difficulties transferring their knowledge of strategies to new learning situations, especially when strategy instruction is brief in duration as it was in this study, it was not clear whether strategy instruction would be sufficient to also improve Grade 8 students' spelling of transfer words as measured on the

immediate spelling dictation and delayed sentence dictation posttests.

Importance of the Study

How can we effectively instruct students who are currently struggling with persistent spelling difficulties? Teachers must realize that finding the solution to this dilemma is as much their responsibility as it is the students'. At the helm of improving students' spelling performance is student attention and motivation: A student who is a poor speller must desire to improve his/her spelling ability. For example, Block and Peskowitz (1990) found that students aged 9 to 11 years could predict their spelling accuracy prior to the spelling of a word. Looking at a word after spelling it, compared to just writing it again, led to more accurate self-evaluations. Student awareness is the first component to good spelling; desire is the second component. Rule (1982) followed a poor speller through Grades 3 and 4. As this student came to realize the importance of correct spelling, he began to take pride in his final writing assignments and desired accurate spelling (Rule, 1982). This type of motivation to improve a spelling difficulty paves the route to spelling strategy instruction.

Introducing explicit spelling strategy instruction is one way that a teacher can assume responsibility for improving students' spelling performance. Initially, the strategy instruction involves teacher centred guidance and then, gradually, instruction is relinquished to the students. This type of training can produce metacognitive skill improvement which is an important component of student performance (Harris, Graham, & Freeman, 1988). The process of enhancing student performance is the goal of strategy instruction. Current research finds that in order to improve spelling performances, students need a repertoire of spelling strategies which they can draw upon for specific needs. This study carries the twofold goal of facilitating student pride in spelling and equipping students with three such cognitive strategies.

Definition of Terms

Analogy Strategy - students are trained to recognize that similar sounding words often contain identical spelling patterns that can be applied to words they are attempting to spell (Woloshyn & Pressley, 1990).

Cloze Procedure - spelling errors are highlighted by leaving blanks for misplaced letters which

need to be corrected and learned (Scott, 1993).

Cognitive Strategy - a component or group of components that contribute to thinking processes that are necessary for competent performance of specific tasks.

Error Correction Strategy - with the assistance of their teachers, students correct their own spelling errors directly after completing a spelling test (Woloshyn & Pressley, 1990).

Explicit Strategy Instruction - as a cognitive strategy is taught, information about when and where to use the strategy is given as well as nonstrategic knowledge, and motivational beliefs are imparted (Snyder & Pressley, 1990).

Imagery Strategy - students are trained to read, say, visualize, write and check the spelling of words that they have previously misspelled (Woloshyn & Pressley, 1990).

Learning Gains - refers to the positive performance difference of students that is observed from pretest to posttest.

Traditional Spelling Instruction - centering around word lists, students complete word analysis and word building exercises.

Training Words - words used in the spelling instruction for students in both the Explicit Strategy Instruction and Traditional Spelling Instruction groups.

Transfer Words - words that were both pretested and posttested, yet students were not trained in how to spell these words; hence learned spelling skills could be transferred to these words.

Scope and Limitations of the Study

This study was designed to examine the combined effects of three instructional strategies on the spelling performance of Grade 8 students. Due to the nature of simultaneous delivery of the strategy triad, it is difficult to isolate the specific contributions that any one strategy may have made. Thus, the marriage of the three strategies must be viewed as the responsible party for affecting student performance and not any one specific strategy. This mandate is in line with the current focus in strategy instruction to provide students with a collection of strategies.

Outline of Remainder of Document

The following chapter is a review of how students learn to spell with the intent of clarifying competent

instructional strategy approaches. Background information will be presented on the three specific spelling strategies that are being highlighted in this study: error correction, imagery and analogy. Finally, support for a multiple strategy approach will be put forth.

The contents of chapter three include a general outline of the study's methodology. Specifics are given about the subjects, materials, procedure, data analysis, and limitations of this thesis.

Chapter four presents the statistical analysis of the results of the study. An extension of this are the conclusions, implications and recommendations for future research and instruction that are contained in chapter five.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

Introduction

To some the possession of proficient spelling skills appears to be the result of a mysterious scientific brew concocted with varying ingredients of knowledge and behavior. By qualitatively examining the process of children's spelling, Weiner (1994) uncovered the elements of proficient spelling: letter knowledge, visual strategies, risk taking, and automaticity. Gerber (1985) stated that the most important factor contributing to proficient spelling is the possession of, "flexible, strategic, and efficient problem-solving behavior" (p. 40). Not only is one single effective approach to spelling impossible to find, but it seems that students require a variety of strategies.

Stages of Spelling Development

Learning to spell is a developmental skill characterized by progressive stages or steps (Gentry, 1984). Evidence of the various stages is marked by students' developmental word spellings which are the result of the different strategies that children use at various stages of spelling development (Gentry, 1984). Gentry noted that these spelling patterns change as

children's exposure to and experiences with print increase. For instance, most children begin with precommunicative spelling (random string of letters) and semiphonetic spelling (some sounds are represented) spellings. Semiphonetic spelling such as "apl" for apple reveals that children have begun to recognize that certain letters stand for certain sounds (Scott, 1993). Gentry (1984) believed that words begin to become discernible when children engage in phonetic spelling where letters are mapped directly to sounds. As an example, the word "time" may be spelled, "tim" as each letter of the word is linked to a specific sound (Scott, 1993).

Transitional spelling, then, emerges and the students attempt to use visual memory patterns as a strategy for correctly spelling words (Gentry, 1984). Scott (1993) noted that evidence for successful passage into this stage is in the correct spelling of such words as, "dear" due to the fact that "ear" has been distinguished from "ere" as in the word "here". Finally, Gentry (1984) stated that students begin to consider morphemic structure along with the complex, abstract aspects of words. The result of this developmental continuum is conventional spelling, an acquisition which is maintained and refined into the adult years.

Considering this developmental model of spelling, it is quite evident that experience with phonetics, word knowledge and learning strategies all have important roles in spelling acquisition. In his review of the early literature, Cramer (1969) drew the conclusion that some type and amount of phonic knowledge and phonic training may be of substantial benefit to spelling achievement. Cramer noted that the relationship between phonic knowledge and spelling ability appears to be highest at lower grade levels. Auditory and visual discrimination abilities are also significantly related to spelling ability (Cramer, 1969). Thus, a degree of knowledge plus some basic skills are prerequisites to spelling acquisition.

Characteristics of Good versus Poor Spellers

A study done by Lesiak, Lesiak and Kirchheimer (1979) a decade later, supported Cramer's connection between auditory and visual discrimination skills and spelling. Differences were found between good and poor Grade 3 spellers in tasks requiring visual discrimination and visual memory for words, auditory discrimination, memory, analysis and synthesis, and auditory-visual integration (Lesiak et al., 1979). Yet, at the sixth grade level, discriminations were found between the good and poor spellers only on tasks

that involved auditory discrimination, memory, analysis and synthesis, and auditory-visual integration (Lesiak et al., 1979).

Other age differences were found by MacLeod and Greenough (1980). At both Grades 1 and 4, good spellers had higher threshold scores in gross memory rather than specifically superior sequential memory. These good spellers were superior in all verbal linguistic short-term memory tasks. Olson, Logan, and Lindsey (1988) also found that good spellers relied on visual memory strategies, word meanings, and saying/writing words to master new words, whereas poor spellers utilized fewer strategies. Good spellers tended to show an early interest in language-related activities such as reading, writing, and spelling (Olson et al., 1988).

Indeed, Anderson (1985) found that good spellers shift from the use of phonemic strategies to the use of a variety of effective strategies which draw on memory and linguistic analysis. As an example, Anderson found that these spellers could switch from a phonemic encoding strategy to a strategy based on analogy with known words. In contrast, poor spellers had a limited number of strategies, relied on surface level information, and they did not internalize information about the complex rules of spelling (Anderson, 1985).

The employment of spelling strategies is what separates the wheat from the chaff or the good from the poor spellers.

The work of Radebaugh (1985) confirmed Anderson's observations. Radebaugh (1985) interviewed good and poor spellers in Grades 3 and 4 after they were asked to spell easy and difficult words. The good spellers mentioned that they used spelling strategies such as visual imagery or broke the words into parts and then tried to spell each part correctly (Radebaugh, 1985). They also thought about the sequence of letters or sounds, by saying the whole word, using spelling rules, or remembering hard spots (Radebaugh, 1985). Radebaugh found that the poor spellers seldom mentioned strategy use and were using a letter-by-letter sounding out approach.

If children who are good spellers have passed through all of the developmental stages of spelling successfully and quickly, is it true that a child who is a poor speller is simply delayed at some point in the continuum of stages? Schwartz (1983) found learning-disabled spellers between the ages of eight and ten years showed little ability to detect spelling patterns in both nonsense and real words as compared to good and poor spellers. Schwartz concluded that the responses of the learning-disabled spellers were

characteristic of younger, normal children. Similarly, Gentry (1984) found that the spelling abilities of learning-disabled populations followed a normal developmental pattern even though the rate was delayed.

Carpenter (1983) worked with children in Grades 1 through 3 and reading-disabled children in Grades 4 through 6 and found that the two groups exhibited similar spelling ability, including the kinds of errors they made. For example, average readers in Grades 4 and 6 used phonetic strategies in spelling whereas, learning-disabled readers in those grades did not employ these strategies (Carpenter, 1983).

Further evidence of the link between reading ability and spelling ability was found in an investigation of the skills of 15 and 16 year olds and adult literacy subjects carried out by Perin (1982). The good readers were better than the poor readers at representing the critical phonemes on spelling tasks. Working with Grade 1 students, Weiner (1994) found that poor readers/spellers relied primarily on sound/symbol knowledge, whereas good readers/spellers demonstrated word pattern knowledge and conscious nonuse of sound/symbol knowledge. It was suggested that the poor readers employed inefficient reading strategies and ineffective spelling strategies as evidenced in their spelling error patterns (Perin, 1982). It seems as

though the poor readers lack the necessary tools for spelling.

In response to this conclusion, it is suggested in a synthesis of psycholinguistic and educational research by Glenn and Hurley (1993), that the spelling problems of some children appear to have resulted from the early adoption of an unusual reading strategy. The strategy may have resulted when the children began the reading process in a state of phonological unreadiness (Glenn & Hurley, 1993). Scott (1993) also suggested that the developmental delay of poor spellers may be attributed to over reliance on "sounding out," and incomplete knowledge of sound/symbol relationships, lack of attention to details of words, or a lack of problem-solving skills. The implications of these suggestions amplify the importance of optimal reading readiness instruction with preschool and kindergarten students.

Phonemic Awareness and Primary Spelling

The body of research surrounding the effects of preschool instruction on spelling is quite extensive and encouraging. Lundberg, Frost and Petersen (1988) exposed preschool children to an eight-month training program of metalinguistic games and exercises that highlighted the phonological structure of language.

These children were followed through the first and second grades and it was observed that they had displayed an enhanced performance on rhyming and word/syllable manipulation tasks and tasks involving phoneme segmentation (Lundberg et al., 1988). Thus, phonemic awareness can have a facilitating effect on subsequent reading and spelling acquisition (Lundberg et al., 1988). The authors (Lundberg et al., 1988) noted that explicit instruction was required to teach early phonemic awareness.

Phonemic awareness appears to play a key role in the future reading competency of preschoolers. Byrne and Fielding-Barnsley (1991) found that preschoolers who were exposed to a program that emphasized recognition of phoneme identity across words had increased levels of phonemic awareness after a 12-week training period. Children with phonemic awareness and knowledge of letter sounds could use their knowledge to decode unfamiliar printed words (Byrne & Fielding-Barnsley, 1991). Phonological awareness and letter knowledge are necessary for the acquisition of alphabetic principles that are required for superior spelling (Byrne & Fielding-Barnsley, 1991). Ball and Blachman (1991) cautioned that instruction in letter names and letter sounds alone does not improve segmentation skills, reading or spelling skills. As

contributors to reading competency, phonological awareness and letter knowledge must be enhanced together.

Further support of the benefits of phoneme awareness and letter knowledge were found by Tangel and Blachman (1992) who offered an 11-week phoneme awareness intervention program to kindergarten children that included direct instruction in the association of letter names and sounds. After this program, these students who received phoneme awareness intervention, were superior to the control group that received traditional instruction in letter names/sounds on three areas: phoneme segmentation, letter name and sound knowledge, and reading phonetically regular words and nonwords (Tangel & Blachman, 1992). These children also produced invented spellings that were rated developmentally superior to those of the control children (Tangel & Blachman, 1992). Similarly, Richgels (1986) found that alphabet knowledge was also positively related to invented spelling. Overall, superior spelling ability appeared to evolve from children producing invented spellings and reading conventional spellings (Richgels, 1986).

In another early phonics instructional study by Ball and Blachman (1991), general benefits were gleaned by kindergarten students who received phoneme awareness

instruction combined with instruction connecting the phonemic segments to alphabet letters. The instruction was found to significantly improve their early reading and spelling skills relative to the nontrained control group. In the first grade, children with high phonemic awareness outperformed their peers who possessed low phonemic awareness on literacy measures such as decoding and spelling skills and writing fluency (Griffith, Klesius & Kromrey, 1992). Foorman, Francis, Novy, and Liberman (1991) also found that first grade students who received more letter-sound instruction improved at a faster rate in correct spellings and readings than students who received a lesser amount of letter-sound instruction.

Scott (1993) suggested that beginning spellers might start with simply sounding out a word, thus isolating the individual sounds or sound segments. Words must be carefully articulated so that attention is devoted to sounds that are not easily heard (Scott, 1993). Indeed, Treiman, Berch and Weatherston (1993) found that kindergarten and Grade 1 students spelled the first and last phonemes of nonwords more accurately than the middle phonemes. This is a normal step in the developmental process of spelling, but some students do not always progress beyond this skill. Yet, with proper guidance, beginning spellers do progress beyond

and pass through the developmental stages of learning to spell (Scott, 1993).

Lieberman, Shankweiler, Fischer, and Carter, (1974) studied preschool, kindergarten and first grade students and found that ability in both syllable and phoneme segmentation increased across grade level, with analysis of phonemes being significantly harder and perfected later than analysis of syllables. Griffith (1991) noted that phonemic awareness and word specific information promoted higher spelling scores in both first and third graders. This result was even more pronounced with the third graders as they memorized orthographic units, whereas the first graders' spelling primarily used a sequential encoding process (Griffith, 1991). It was concluded (Griffith, 1991) that phonemic awareness was a foundation for the development of word specific information. Yet, in order to reap the benefits of phoneme awareness and letter knowledge, the latter two must be simultaneously enhanced.

Spelling Instruction for Older Students

In an investigation of the spelling and reading strategies of seventh grade students, Scott (1991) found that students who were both good readers and good spellers performed significantly better than poor spellers who were either good or poor readers on tests

of word recognition, morphological knowledge, in spelling pseudo-words and in other spelling error categories. The good readers/good spellers demonstrated strong word recognition skills and the ability to move from derived to base forms in a verbal context (Scott, 1991). The conclusion drawn by Scott (1991) was that Grade 7 students, skilled in reading and spelling depend on some of the same skills, and weak reading skills seem to be related to poor spelling ability. The need to teach spelling to students above the primary grade levels is quite apparent.

Rieth, Hathaway, Axelrod, Wood, Anderson and Fitzgerald (1974) realized that students did best on spelling tests when they received a portion of the words each day and were tested daily than when they received all words at the beginning of the week and did not have daily tests. The synopsis: Spelling instruction should include a whole word approach in sentence context and the words should be studied, reviewed and evaluated daily. It may be worth noting that these are general principles for teaching spelling that may apply to all students with age appropriate revisions.

Additionally, Wong (1986) suggested that spelling instruction should include specific information about words and about monitoring strategies. Working with

Grade 6 students she found that correct spelling involved a coordination of several sources of word knowledge: phonological, orthographic, syntactic and semantic (Wong, 1986). This conclusion was based on an earlier study by Wong (1983, as cited in Wong, 1986) in which students in Grade 6 learned a pattern for transforming root words to another part of speech coupled with a self-questioning strategy. All students were found to have benefitted from the instruction (Wong, 1986). Therefore, in order for students to internalize the spelling of words they should be quite knowledgeable about those words and have the ability to apply monitoring strategies.

Chittenden (1984) devised a program for high school students that included an emphasis on correct pronunciation and speech sounds, syllabication, and memorization techniques. Some of the students found it beneficial to concentrate on writing words in cursive to promote the flowing motion of the word (Chittenden, 1984). In terms of a visual image this would also promote continuity. Yet, the key lies in the flexibility to modify the strategy to the learner and circumstance.

Explicit Strategy Instruction and Spelling

It is quite apparent that the benefits of an early

spelling readiness program are numerous (e.g., Richgels, 1986; Lundberg, Frost & Petersen, 1988; Ball & Blachman, 1991; Byrne & Fielding-Barnsley, 1991; Tangel & Blachman, 1992). However, the question still remains as to how educators might effectively instruct their students who are currently struggling with persistent spelling difficulties. In an attempt to propose a solution to this question, the following is a review of the literature on explicit strategy instruction and uncover a few specific spelling strategies.

It has been my experience that students are not always effective learners; they do not know how they learn or how to study. Teaching is not just simply telling (James, 1958; as cited in Invernizzi, Avouzeid & Gill, 1994). By extension, teaching spelling should not merely involve the imparting of rules to students. Spencer, Snart and Das (1989) found that when strategies, rather than academic content, are actively taught, students are more motivated to learn and are more likely to generalize what they learn. Specifically, Graham and Freeman (1986) concluded that some students experience spelling difficulties due to problems in self-regulation of strategic behaviour. Brown (1993) stated that, without strategies for spelling words, students spend too much time focused at

the level of letters and sounds rather than on composing meaning. Moreover, attempting to sound out words or using the dictionary during writing also tends to be time consuming and may interrupt the composing process (Brown, 1993). The need for efficient, learning strategies for spelling is apparent.

This need is likely to be satisfied by the explicit instruction of spelling strategies. It is now known that learning strategies are one means through which teachers can assist students in their quest to acquire and maintain spelling competence (Woloshyn & Pressley, 1990). Yet, strategies are unique to the task and the individual: Certain strategies are more appropriate to certain tasks and certain students (Woloshyn & Pressley, 1990). Obviously, no single strategy exists for teaching all spelling (Woloshyn & Pressley, 1990). Therefore, to instill in poor spellers the practices used by good spellers, educators can resort to explicit instruction of several spelling learning strategies.

In explicit strategy instruction a learning strategy is taught along with information about when and where to use the strategy. This involves imparting metacognitive information about the strategies as well as nonstrategic knowledge and motivational beliefs (Snyder & Pressley, 1990). The goal of strategy

instruction is to teach the strategies in a manner that promotes their future use by students in a self-regulated fashion (Snyder and Pressley, 1990).

Spelling strategy instruction coupled with metacognitive feedback is viable even for the youngest of students. Kernaghan and Woloshyn (1995) found that Grade 1 students were capable of applying spelling strategies that were taught explicitly. On a spelling dictation test, students who received multiple strategy instruction, including metacognitive information, outperformed those who had received just strategy instruction or traditional language arts activities (Kernaghan & Woloshyn, 1995).

Perhaps the greatest test of the efficacy of strategy instruction is posed by learning- and reading-disabled students. Learning-disabled students differ from their non-disabled peers in phonetic spelling ability, non-phonetic spelling ability, and recognition spelling ability (Carpenter & Miller, 1982). In fact, learning-disabled students typically misspell two to four times more words in their writing than their normally achieving classmates (Deno, Marston, & Mirkin, 1982; as cited in Graham, Harris, & Loynachan, 1994). Generally, reading-disabled students have the most difficulty acquiring proficient spelling through a phonological approach (Lennox & Siegel, 1993).

Additionally, Swanson and Ramalgia (1992) found significant correlations between memory and spelling errors for reading-disabled students, as well as an overreliance on phonological codes to spell.

More encouragingly, Fulk and Stormont-Spurgin (1995) reviewed 38 spelling strategy interventions and found that 35 of them improved the spelling performance of learning-disabled students. For example, Graham and Freeman (1986) taught learning-disabled students a multi-step spelling study strategy: (1) Say the word, (2) write and say the word, (3) check the word, (4) trace and say the word, (5) write the word from memory and check, (6) repeat the first five steps. Students in this strategy training group recalled the correct spelling of more words than controls who devised their own study method. Additionally, the students in the strategy group were better at predicting their level of success on spelling tests than the control group students.

Among others, Dangel (1989) found that learning-disabled students who were trained in planning and self-recording strategies averaged more words spelled correctly. Wong (1986) discovered that a self-questioning strategy coupled with word analysis skills knowledge resulted in improved spelling accuracy for learning-disabled students. Fulk et al., (1995)

concluded that it was important to address the needs of poor spellers (learning disabled and non-disabled alike) with instruction that considers both the developmental stage of students and the empirical effectiveness of instructional techniques. It would seem that several spelling strategies have passed the test of efficacy posed by learning disabled students.

Error Correction Strategy and Cloze Procedure

The first specific strategy under investigation in this study is student-centred error correction. The procedure of error correction allows the student to self-correct spelling mistakes, and receiving immediate feedback. This feedback is effective in the enhancement of memory, attention, and discrimination of spelling patterns (Gettinger, 1993). Over two decades ago, Zutell (1975) advocated spelling instruction that would allow students to formulate, test, and evaluate their own hypotheses about the spelling of words. If denied this opportunity, Gettinger (1993) argued that students' spelling problems may persist.

Monitoring their own errors is a useful starting point for most students on the road to spelling improvement. A common misconception is that if students study a misspelled word, then they will continue to misspell this word as it is engrained in

their memory. Ehri, Gibbs, and Underwood (1988) studied both primary grade and college level students and revealed that studying misspelled words neither impaired nor facilitated the learning of correct spelling. In fact, imitating students' spelling errors and then showing the correct spelling is a more effective strategy than simply showing the correct spelling (Kauffman, Hallahan, Haas, Brame, & Boren, 1978). Kauffman et al., (1978) noted that this was especially true with words that do not follow phonetic rules where children must rely on their visual memory. Indeed, students benefitted the most from a procedure that highlighted a spelling error and allowed students to direct their correction (Gettinger, 1985).

In a more recent study, Gettinger (1993) found that when Grade 3 students were exposed to a procedure of error imitation and correction along with repeated practice to mastery, their spelling improved as compared to the spelling of their peers, who received traditional spelling instruction. For each word, the students in this study compared their misspellings to conventional spellings, highlighted their errors, practised writing the words and then retesting to ensure mastery (Gettinger, 1993). Similarly, Bradley and King (1992) found that exposure to correctly spelled words in a proofreading exercise improved

spelling accuracy for Grade 5 students. It has been inferred (Gettinger, 1993) that students continued to implement an error correction strategy as their higher spelling scores were maintained for up to six weeks following initial strategy training. The practice of error correction allows students to monitor their success as well as their level of productivity (Graham & Voth, 1990).

Corrective feedback with imitation and repeated practice with a word are also integral factors that contribute to the spelling improvement of learning-disabled students (Gerber & Lydiatt, 1984). The spelling errors committed by learning-disabled students are similar to those of younger, normally achieving children and are logical and systematic (Gerber, 1986). In his study, Gerber (1986) found that learning-disabled subjects demonstrated systematic improvements in the quality of their spelling following imitation-modelling and corrective feedback. Moreover, Gerber and Lydiatt (1984) discovered that learning-disabled students were capable of transferring learned phonetic elements to a similar, rhyming list of words.

Why is the error correction strategy effective? Gerber and Lydiatt (1984) postulated that exposure to errors and correct spellings focuses student attention and provides practice in the application of spelling

patterns. From an information processing perspective, error correction may assist students to accommodate existing spelling knowledge with new information. This conclusion was based on the observation that students' spellings gradually improved over trials, perhaps due to their increased understanding and focused attention to the discrimination of errors (Gerber & Lydiatt, 1984).

To minimize the supervisory time required of teachers, a systematic error correction procedure could be introduced to students. Scott (1993) suggested using a cloze procedure for corrections as it highlights only the letters which need to be learned and helps children focus their attention. Students should only work with words that they have misspelled and receive general information about these words (Scott, 1993). By highlighting errors, this procedure provides salient visual cues to guide students' attention (Gettinger, 1993). In this manner, it seems that the old adage that "one learns from one's mistakes" may indeed hold true.

Imagery Strategy

The value of mental imagery as a spelling strategy has been realized very early. Radaker (1963) found that imagery was successful in improving students'

spelling performance even one year following instruction. Fourth grade students were given words and asked to create an image of these words with photographic clarity. Specifically, they were instructed to study a word that had been printed on a card and then close their eyes and attempt to reconstruct this image in their mind. Imagery training permitted the subjects to obtain sharply defined images of words which served as models in assessing similar representations (Radaker, 1963). These models allowed subjects to discriminate words effectively.

In comparing the mental imagery method and the drill and practice method, Caban, Hambleton, Coffing, Conway, and Swaminathan, (1978) found that mental imagery was more effective than drill and practise methods at improving the quality of spelling and retention with eighth grade students. Sears and Johnson (1986) compared the effectiveness of mental imagery through four different treatment approaches: visual imagery, auditory methods, computers and kinaesthetic approaches. The visual imagery approach was modelled after the approach of Radaker (1963), whereas the auditory method focused on correct pronunciation and letter/sound relationships (Sears & Johnson, 1986). The computer treatment involved attending to a word image on a screen, while the

kinaesthetic application demanded that the students copy words (Sears & Johnson, 1986). Visual imagery was found to be the most important factor in spelling performance and retention (Sears & Johnson, 1986).

The role of visual memory in spelling ability was studied by Tenney (1980, as cited in Ormrod, 1985) who instructed students to discern between correctly spelled and commonly misspelled versions of words. Students made more correct choices when they were allowed to write down the words than when they were not allowed to do so. Similarly, Ormrod (1985) investigated the role of visual memory in learning to spell words with a matching task in which one nonsense word was presented. Following the presentation of the first word, another followed which was either identical in spelling or differed by only one letter. It was found that good spellers were able to identify matched and mismatched pairs, while poor spellers showed greater difficulty in accomplishing this task. Ormrod (1985) and Frith (1980) concluded that good spellers read all the letters of words they see, whereas poor spellers overlook some of the letters they see in reading. This allows good spellers to be more accurate in identifying correctly matched words. By training students to use the imagery strategy, all letters in a word are individually attended to and less likely to be

neglected in subsequent spelling. Ormrod (1986) found it effective to divide a word into syllables and pay attention to the visual representation of each syllable as it was pronounced. This assisted the students to learn which letters in the word represent each sound (Ormrod, 1986).

Evidence suggests that error correction and imagery instruction facilitate the acquisition of correct spelling. However, the ultimate goal of spelling instruction is to generalize this knowledge to writing. Training in an analogy strategy provides a link that bridges the gap between spelling lessons and writing unknown words.

Analogy Strategy

"The human mind naturally seeks to find invariance across variation" (Invernizzi, Abouzeid & Gill, 1994, p. 166). This quote defines the basic principle on which the analogy strategy is founded. Students resort to the accurate spelling patterns of known words to assist them in spelling unknown words.

To teach the analogy strategy, students memorize the rule that when words rhyme, the last part of the words are likely to be spelled in the same way (Woloshyn & Pressley, 1990). Examples of this rule are then provided. The students would then identify

rhyming words and isolate the letter pattern that the two words share according to the rhyming rule. The students can then gain experience with examples of this rule and a comparative word study of the common letter patterns.

Analogy behavior is automatic in some mature students (Hodges, 1982; as cited in Woloshyn & Pressley, 1990) and in some students as young as second grade (Beers, 1976, as cited in Englert, Hiebert, & Stewart, 1985). Additionally, Gerber (1984, as cited in Dixon, 1991) found that even in the absence of instruction, learning-disabled students attempted to formulate phonemic spelling generalizations to words that they did know how to spell. The analogy strategy has been practised for many years under numerous titles and several variations (e.g., Carpenter, 1983; Englert et. al., 1985; Schlagel & Schlagel, 1992; Brown, 1993; Invernizzi, Abouzeid & Gill, 1994). Yet, all of these approaches have in common a comparison of words so that similar patterns of letter organization can be used (Zutell, 1975).

The value of a solid phonetic knowledge base has been established in the earlier review of early spelling readiness programs. But, as older students are faced with more complex vocabulary demands, they cannot rely solely on a phonetic strategy to encode

words. Dixon (1991) noted that efforts to analyze the phonemic regularity of spelling often fails because decoding phonemics, such as those used in reading, differ from encoding phonemics such as those used in spelling. When searching for an approach to aid learning-disabled students achieve generalization in their spelling, Dixon (1991) realized that the phonemic approach was falling short due to inconsistencies. An illustration of this is found in "ee" for when a student decodes "ee" he/she reads long "e," but to encode a long "e" sound the possibilities include writing "ea," "eo," "ei" and "ie" (Dixon, 1991). In other words, a phonemic strategy for spelling falls short due to the fact that individual letter-sound correspondences are less reliable than spelling patterns (Brown, 1993). This fact was illustrated by Carlisle (1987), (as cited in Dixon, 1991) who found that when attempting to spell, a point of overgeneralization with phonemics was met by learning-disabled Grade 9 students and non-disabled Grade 4 students as they were committing misspellings that were phonemically feasible. Indeed, Carpenter (1983) found that teaching the application of phonetic strategies may be productive in conjunction with noting discriminate differences in words. Hence, students reach a point at which they must integrate an alternate

strategy into their repertoire that permits them to efficiently encode a word based on familiar spelling patterns.

The benefits of the analogy strategy in spelling have also been realized by young students. Brown (1993) discovered that analogy instruction helped Grade 2 students develop an independent strategy for generating spellings. These children were taught decoding by analogy through direct instruction and by incorporating the strategy into purposeful reading and writing activities throughout the school year. Additionally, Brown (1993) noted that the analogy strategy promoted independence during writing as the children could apply patterns to spell new words on their own. When students used a common pattern in their generated spelling, their words were more likely to be decoded as this component is recognizable by the reader (Brown, 1993).

Schlagel and Schlagel (1992) found that middle school students also benefited from a word sort activity in which they categorized words into analogous spelling patterns. Invernizzi et al. (1994) found improvement in the spelling of students ages six, eight and 14 years with a word study program that allowed the students to examine and manipulate words according to their similarities and differences. The role of the

teacher was to provide a degree of direction that allowed students to discover spelling patterns for themselves. It was concluded (Invernizzi et al., 1994) that this discovery approach to spelling diminishes the complexity of words as students recognize that they could successfully employ their present spelling knowledge.

The work of Englert et al. (1985) highlighted the benefits of the analogy strategy for mildly disabled students. It was found (Englert et al., 1985) that direct instruction in an analogy strategy with target words assisted the students in spelling new words and high-frequency sight words that were similar in structure and rhymed with the target words. The students who trained under this strategy were more often correct in their spellings than the students in the control group. The control group was simply required to read words, verbally spell and then write the words from memory, and, finally, use the word in a cloze task.

With older students, the adaptations of the analogy strategy can be even more diverse. A corollary to the analogy strategy when working with morphemes is that even though bases recur in several words, they may require minor but predictable spelling changes (Hanna, Hodges & Hanna, 1971; as cited in Dixon, 1991).

Students should be encouraged to become aware that words which are related in meaning are usually related in spelling, even though they may not sound the same (Scott, 1993). When students relate words to a common base, they are linking them together in spelling families. Spelling families often retain the same phoneme component(s) even though sound may change when suffixes or prefixes are added (Scott, 1993).

Sterling and Rusby (1986) worked with 12-year-old students who were taught to spell novel derivatives using a strategy that depended on the morphemic relationship between root and derivative. It is believed that the regularities in language are useful and extensive enough to be salient and learned (Sterling & Rusby, 1986). Bailet (1990) contended that maturing spellers require a means of organizing, storing and then retrieving the spelling of words. Even learning-disabled students derive benefit from explicit, linguistically-based task structure to achieve internalization and mastery of letter patterns (Bailet, 1990). Dixon (1991) concluded that, in learning, meaningfulness seems to contribute to retention: A strategy such as analogy that capitalizes on common word bases is likely to be effective.

Summary

A distinct profile exists that delineates poor spellers from good spellers. This distinction underscores the direct and profound impact that spelling instruction has on the spelling performance of students. The preventative importance of early spelling instruction through phonemic awareness has been discussed as has the effectiveness of a few strategy programs for older spellers. Three empirically validated spelling strategies have been highlighted: error correction with the cloze procedure, imagery strategy and analogy strategy.

Individually, each of these spelling strategies has resulted in significant improvements to student spelling performance. Yet, evidence exists that supports the notion that students require a repertoire of learning strategies to be effective spellers (Woloshyn & Pressley, 1990). One of the most productive vehicles for the teaching of these spelling strategies is through explicit instruction (Woloshyn & Pressley, 1990). Indeed, the benefits of providing even the young spellers with several spelling strategies through explicit instruction has been documented (Kernaghan & Woloshyn, 1995).

Present Study

With the relative scarcity of research with older students' performance with explicit spelling strategies, the present research sought to explore spelling instruction for Grade 8 students. This study was designed to examine the effects of a combination of three instructional strategies on the spelling performance: error correction with a cloze procedure, an imagery strategy and an analogy strategy. The performance of students receiving the triad strategy approach was compared to a control group that received traditional drill and practice speller-type exercises. It was hypothesised that the students in the strategy instruction group would acquire a repertoire of strategies that would facilitate their correct future application to spelling. Thus, with older students, a marriage of three strategies (error correction, imagery, and analogy) through the power of explicit instruction was believed to result in improvements to their overall spelling performance.

CHAPTER THREE: METHODOLOGY

Introduction

Contained herein is a procedural outline of the triad strategy approach for spelling that is under current investigation. The subject sample is profiled and the materials employed in this study are described in detail. Models of the training programs are presented as scripts and a review of the possible limitations of this research are put forth.

Upon completion of the research, both groups of subjects (strategy and traditional) were debriefed about the effectiveness of spelling strategy instruction and why strategies should be learned.

Subjects

Twenty-six Grade 8 students (14 males, 12 females) from two separate schools comprised the subject sample for this study. Written consent to participate in this study was obtained from the parents of the students. Refer to Appendix A for the parental consent form.

Materials

Pretest and Immediate Posttest

All participants received a 70-word pretest and

immediate posttest that was verbally dictated to them. Words were selected from the following three Grade 8 Canadian spelling text books: Ireland (1978), Kuska, Webster, Elford and Lewis (1977), and Thomas and Braun (1979). The students had not previously been exposed to any of the lessons in these spelling texts. These words were grouped into ten word families consisting of seven members in each family. The members of a word family were related by a common spelling pattern in the final position of the words (e.g., "deceive," "conceive," "receive," "perceive," "preconceive"). The 70 words were randomly dictated to the students so as to not deliberately highlight their rhyming quality. The words were individually stated, then the word in a sentence was given, and then the word was repeated again.

Of the 70 spelling words, 50 were designated target or teaching words and were used for the direct instruction of the triad of strategies. The remaining 20 words were transfer words (see Appendix B). The purpose of these latter words was to test students' application of the three strategies to unknown words.

Five Weekly Posttests

Five weekly posttests that consisted of 14 words each were administered to the subjects. Each of these

mini-posttests covered two word families at a time. The words were individually dictated, the word in a sentence was given, and then the word was repeated again. The five weekly posttests occurred before the lesson for the session.

Delayed Posttest

Each of the 70 words in the spelling dictations list was coupled into a sentence that defined its meaning through the context of the sentence. These sentences were not the same as those used for the pretest and immediate posttest. Refer to Appendix C for this list of sentences. This cumulative sentence spelling test was given to the subjects one month after the completion of the strategy training.

It was anticipated that the subjects in the strategy group would recall their previously made spelling errors as highlighted with the error correction strategy and then visualize the correct spelling of the word with the imagery strategy as they used an analogous word as a prompt to spell the transfer word.

Procedure

Overview

All 26 subjects were initially given the 70-item

pretest. The researcher verbally dictated each of the words for the subjects to write onto lined paper. Words were randomly selected from each of the 10 word families to camouflage the rhyming qualities of the items.

Thirteen students from one school were arbitrarily chosen to form the strategy instruction group. These 13 students were matched by gender and pretest measure to controls that formed the traditional instruction group. Subjects assigned to the strategy group underwent five weeks of spelling strategy instruction in their classroom setting, during the fall of 1995. Subjects in the traditional group also completed five weeks of spelling instruction. They were encouraged to improve their spelling and completed traditional spelling activities, during the winter of 1996. Both groups of students had a total of 10 sessions with the researcher.

For the students in the traditional condition, the pretests were graded out of 70 and returned to the students for independent review. A word was marked incorrect if it contained any misspelling, and the correct spelling was written beside the students' misspellings. A point was allocated for each correct spelling.

For the students in the strategy condition, the 70

spelling words were regrouped into 10 word families, each of seven members. Within a family, five words were target or teaching words used for the direct instruction of the triad of strategies. The remaining two words from the family were deemed transfer words and were not used for training, but were posttested.

Five target or training words of two word families (total = 10 words) were focused on each week. Training activities were completed over five weekly sessions. In a given session the students in the strategy group worked with ten words (five from one word family and five from a second word family). One week following the training with these words, a 14-item posttest was given that contained all members of a word family (target/training and transfer words). These practices were consistent with the recommendations of Graham and Voth (1990) that pretests should be used to concentrate students' studying on the misspelled words and weekly spelling lists should be limited to a small number of high frequency words that share a common element/sound. Additionally, it is recommended (Graham & Voth, 1990) that students should be given regular check up tests.

After the five weekly training sessions were complete, all the subjects were given the 70-item immediate posttest. This posttest version of the initial Pretest followed the same procedure as the

pretest version: The words were individually dictated, then word in a sentence was given, and then the word was repeated again.

One month after the last of the five weekly sessions, the delayed posttest was dictated to all of the subjects. This measure was intended to reveal the retention and application qualities of the strategy instruction.

Traditional Spelling Instruction

The subjects in the traditional group were returned their 70-word spelling pretest. They were encouraged to improve their spelling with traditional spelling activities that were modelled after Grade 8 basal spellers such as: The Canadian Spelling Series 8, (Ireland, 1978), Spelling in Language Arts, (Kuska, Webster, Elford & Lewis, 1977), and The Canadian Spelling Program, (Thomas & Braun, 1979). Five weekly lesson plans which encompassed all 50 target/training words are presented in Appendix D and they included such activities as writing out spelling errors, using target words in sentences, unscrambling target words, filling in missing letters in a hang-man type exercise, and proofreading tasks. These exercises took the same amount of instructional time as the strategy exercises. The traditional group also completed the same five

weekly post-tests that were administered to the strategy group.

Explicit Strategy Instruction

Current literature reveals that explicit strategy instruction promotes student learning (Woloshyn & Pressley, 1990). The steps of three learning strategies, along with information about how, when and where to use these strategies, were taught to subjects in the treatment condition. The subjects were encouraged to practise the strategies as they studied their spelling words between lessons.

Error Correction Strategy with Cloze Procedure

The students in the strategy condition were trained in the use of the error correction strategy as they identified their spelling errors ("hard spots") with the cloze procedure. In this practice, the spelling errors of three words out of each word family were highlighted by leaving blanks for misplaced letters which needed to be corrected and learned. The researcher acted as a facilitator while the subjects scored and corrected their own spelling errors. The researcher instructed the students to evaluate each of the dictated target/training words as a fraction of correct letter placement over total number of letters

in the word. For example, if "nigt" were the spelling attempt for "night" then the score would be 4 (correctly positioned letters) out of 5 (total letters). The subjects then made corrections to their words by leaving blanks for misspelled letters, such as "nig _ t." The blanks were promoted as representing the spot(s) to which the students had to pay special attention and study. The students were explicitly told that by highlighting their hard spots and focusing their attention on their error correction that they would improve their spelling by probably not making the same error in the future. Appendix E contains phrases that the researcher employed during the error correction strategy with the cloze procedure.

Imagery Strategy

To internalize the spelling amendments made in the error correction strategy, students were trained in the use of an imagery strategy. To begin with, attention was drawn to the sequence of the letters in the word. Then the students were to close their eyes and try to imagine typing each word letter-by-letter via a keyboard onto a computer monitor. For the word "night" the subjects were to visualize each letter individually being printed in their mind, "n - i - g - h - t." Subjects were trained to visualize, write the words and

then check the spelling of these words. This technique was promoted as one that helps students remember the correct spellings of words. The students were told to apply the imagery strategy to help them internalize their spelling corrections and assist them to retrieve these correct spellings. Refer to Appendix F for researcher prompts on this strategy.

Analogy Strategy

After studying the spelling of a target word through the imagery strategy, the subjects were then told to construct families of words (from the total group of target/training words) that rhymed with their spelling errors. Subjects then studied the similarities between the words in the analogy family words. These subjects were trained to recognize that similar sounding words often contain identical spelling patterns which can be applied to words they are attempting to spell. For example, the word "night" rhymes with "flight," "sight," and "light" and all four of these words have the same ending, "i-g-h-t." An emphasis was placed on identifying this common letter pattern as remembering the similarities between analogy words aids recall and generation in correct spellings. Students were told that they could refer to the rhyming qualities of a word to assist them to spell the last

part of an analogous word. The analogy strategy was promoted as a means to aid students in writing unknown words. Refer to Appendix G for an outline of the analogy strategy.

Data Analysis

The collected data for analysis consisted of the pretest and posttest performance scores. The five weekly posttest scores and the immediate posttest were compared to the initial pretest scores and then the delayed posttest scores were compared to both the former and the latter scores. The statistical analyses were completed using the Dunnett procedure (Kirk, 1982). The goal was to determine if a significant difference existed between students who received traditional spelling instruction versus spelling strategy instruction, and whether this difference was maintained over time.

Limitations

To safely generalize the results of this study to a larger population, a more substantial sample size should be used. Additionally, all subjects were students of two Grade 8 classrooms in a small, middle-class neighbourhood: Greater diversity in the origin of the subjects would be more representative of the

population at large. As well, the homogeneous age of the subjects makes it difficult to generalize the results beyond Grade 8 students.

The materials employed for this study could be more sensitive to the individual differences of students. The chosen word lists could be altered to ensure that the students were dealing with grade level appropriate words. Difficult vocabulary has been found to confuse their learning strategies and inhibitions about spelling and writing result (Schlagel, 1982, as cited in Schlagel & Schlagel, 1992). To further personalize the spelling lessons, each student could have a list of misspelled words that he/she have used in his/her own writing.

Experimenter bias may play a role in the procedure of the study as the pretesting, training and posttesting were completed solely by the experimenter. This bias may have been conveyed through the experimenter's positive motivation toward the strategy training. The use of scripts and researcher prompts during the study was an aid to combat experimenter bias.

There was a bias with regard to time that was skewed in favour of the control group. Specifically, the effect of time favoured the students in the traditional instruction group as they received their

instruction in the winter of 1996, whereas, the traditional instruction group received their instruction in the fall of 1995. In general, teachers observe student maturation and skill development over the course of the school year. Teachers generally know their students better with respect to learning and students are more settled in the classroom. In the future the time frame of this study should be structured so that both subject groups receive instruction at the same time in the school year. Finally, because of the simultaneous delivery of the strategy triad, it was difficult to isolate the specific contributions of each strategy. Thus, the marriage of the three strategies must be viewed as the responsible party for affecting student performance and not any one specific strategy.

Summary

This study was designed to examine the effects of a combination of three instructional strategies on the spelling performance of Grade 8 students. Participants were assigned either to a traditional group or a strategy group. The traditional group received traditional speller-type exercises during the study. Students in the experimental condition completed an error correction as they amended their spelling errors

with a cloze procedure. To internalize the spelling corrections, the students then engaged in an imagery strategy. Finally, an analogy strategy was presented as a means of synthesizing their word knowledge and facilitating the correct future application of the spelling. These subjects were encouraged to exercise the cloze procedure, imagery and analogy strategies when they were reviewing their spelling words. It was the goal of this research to compare students' spelling performances prior to and after exposure to their assigned spelling instructions.

CHAPTER FOUR: FINDINGS

Introduction

Data were collected from the 26 subjects of this study over eight test occasions. Both the pretest and total posttest consisted of a 70-item (50 training words and 20 transfer words) dictated word spelling test. Five weekly posttests consisting of 14 items (10 training words and 4 transfer words) were administered after each instructional session. A delayed posttest that encompassed all 70 items (50 training words and 20 transfer words) in the context of sentences was given one month after training.

There were 13 students in each of the strategy and traditional groups. Each of these groups consisted of six females and seven males. The subjects in both the strategy instruction and traditional instruction groups were matched by sex and pretest performance scores.

A priori comparisons were made between the pretest, immediate and delayed posttest scores of the subjects in the strategy and traditional groups to ascertain whether a significant performance difference existed between those who received a triad spelling strategy approach versus those who received a traditional spelling instruction method. Comparisons were also made to assess differences between the "growth" scores of each group from pretest to posttest.

The Dunnett procedure (Kirk, 1982) was used to make these comparisons. For the training items where a directional hypothesis was made that subjects in the strategy instruction group would outperform the subjects in the traditional instruction group, the critical value for all between subjects' comparisons was $t(24) = 1.71$. For the transfer items where the direction of the hypothesis was uncertain, then a nondirectional hypothesis was made that subjects in the strategy instruction group and the subjects in the traditional instruction group would perform similarly. Consequently, the critical value for all between subjects' comparisons was $t(24) = 2.06$. The critical $t = 2.06$ was used to assess performance differences for the total test score.

The results of the Dunnett procedure will be presented for the pretest, immediate posttest and delayed posttest scores, then the five weekly posttests and the learning for each group. Distinctions have been made between scores obtained on the total test score, the 50 training words and the 20 transfer words.

In a secondary analysis of these data, 14 of the 70 total words were removed. These words, (Word Families #2 and #4, see Appendix B) were excluded as members of these two families did not strictly adhere to the rhyming principle of the analogy strategy. That is,

when two words sound the same they are spelled the same. Thus, the pretest and posttest score consisted of 56-item (40 training words and 16 transfer words) dictated word spelling tests. There were three weekly posttests of 14 items (10 training words and four transfer words) and two weekly posttests of seven items (five training words and two transfer words). The delayed posttest encompassed all 56 items (40 training words and 16 transfer words).

Pretest, Immediate Posttest and Delayed Posttest

All of the subjects' tests were scored in a consistent fashion: An item was marked wrong if spelled incorrectly or if the spelling were illegible. An item was marked correct if spelled correctly. Students received one point for each correctly spelled item.

Total Words

Table 1 displays students' means and standard deviations for the total training and transfer words test at pretest, immediate posttest and delayed posttest as a function of the experimental condition. No significant difference were found between the groups

Table 1

Means and Standard Deviations for Pretest, Immediate Posttest and Delayed Dictated Sentence Spelling Tests as a Function of Experimental Condition

		Total	Training	Transfer
Pretest				
Strategy	M	36.46	22.69	13.77
Instruction	S.D.	9.54	7.57	2.35
Traditional	M	35.85	23.62	12.23
Instruction	S.D.	7.90	6.33	1.96
Immediate Posttest				
Strategy	M	50.54	33.31	16.46
Instruction	S.D.	10.12	8.83	2.44
Traditional	M	49.00	34.00	14.23
Instruction	S.D.	10.50	9.08	3.06
Delayed Posttest				
Strategy	M	48.15	32.54	15.62
Instruction	S.D.	9.04	6.98	2.47
Traditional	M	46.85	33.62	13.23
Instruction	S.D.	10.44	7.17	3.49

at pretest, $t(24) = .18$, $MS_e = 76.79$, $p > .05$. At immediate posttest, no significant difference was found between the groups, $t(24) = .38$, $MS_e = 106.39$, $p > .05$. Similarly, at the delayed posttest, no significant difference was found, $t(24) = .34$, $MS_e = 95.39$, $p > .05$.

Training Words

No significant difference was found between the groups at pretest, $t(24) = .34$, $MS_e = 48.66$, $p > .05$. At immediate posttest, no significant difference was found, $t(24) = .20$, $MS_e = 80.20$, $p > .05$. Similarly, at the delayed posttest, no significant difference was found, $t(24) = .39$, $MS_e = 50.10$, $p > .05$.

Transfer Words

No significant difference was found between the groups at pretest, $t(24) = 1.81$, $MS_e = 4.69$, $p > .05$. At immediate posttest, a significant difference was found favouring the students in the strategy condition, $t(24) = 2.06$, $MS_e = 7.65$, $p < .05$. At the delayed posttest, strategy students descriptively outperformed the traditional instruction students with that difference approaching significance, $t(24) = 2.01$, $MS_e = 9.14$, $p > .05$.

Five Weekly Post-tests

The results of the Dunnett procedure (Kirk, 1982) will be presented for the five weekly posttests. For each weekly posttest, the total 14-item word score was divided between the 10 training words and the four transfer words. The critical $t = 2.06$ was used to assess performance differences in the total test score. The means and standard deviations for each weekly test are listed in Table 2 as a function of item type, time and experimental condition.

On the weekly posttests, a point was allocated when a word was spelled correctly. No point was given when the spelling was incorrect or if the spelling were illegible.

Total Weekly Words

No significant difference was found between the groups for Week 1, $t(24) = 1.44$, $MS_e = 10.63$, $p > .05$, or Week 2, $t(24) = 1.94$, $MS_e = 6.38$, $p > .05$. Similarly, no significant differences were found for Week 3, $t(24) = 1.43$, $MS_e = 2.71$, $p > .05$, Week 4, $t(24) = 1.44$, $MS_e = 4.76$, $p > .05$, or Week 5, $t(24) = .35$, $MS_e = 7.75$, $p > .05$.

Table 2

Means and Standard Deviations for Five Weekly Posttests
as a Function of Item Type, Time and Experimental
Condition

		Total	Training	Transfer
<hr/>				
		Week 1		
Strategy	M	10.08	7.00	3.08
Instruction	S.D.	3.68	2.74	1.04
Traditional	M	8.23	5.54	2.69
Instruction	S.D.	2.77	1.94	1.11
<hr/>				
		Week 2		
Strategy	M	10.23	7.00	3.15
Instruction	S.D.	2.01	1.41	.99
Traditional	M	8.31	6.46	1.85
Instruction	S.D.	2.95	2.11	1.21
<hr/>				
		Week 3		
Strategy	M	11.00	7.46	3.54
Instruction	S.D.	1.73	1.51	.52
Traditional	M	11.92	8.23	3.69
Instruction	S.D.	1.55	1.59	.48
<hr/>				

Table 2 (continued)

Means and Standard Deviations for Five Weekly Posttests as a Function of Item Type, Time and Experimental Condition

Week 4				
Strategy	M	11.00	7.38	3.62
Instruction	S.D.	1.73	1.56	.51
Traditional	M	9.77	7.00	2.77
Instruction	S.D.	2.55	1.96	1.01
Week 5				
Strategy	M	9.85	6.54	3.31
Instruction	S.D.	3.05	2.57	.75
Traditional	M	10.23	7.62	2.62
Instruction	S.D.	2.49	2.02	.96

Training Weekly Words

No significant difference was found between the groups for Week 1 $t(24) = 1.57$, $MS_e = 5.63$, $p > .05$, or for Week 2 $t(24) = .77$, $MS_e = 3.22$, $p > .05$. Similarly, no significant differences were found for Week 3 $t(24) = 1.27$, $MS_e = 2.40$, $p > .05$, Week 4 $t(24) = .55$, $MS_e = 3.13$, $p > .05$, or Week 5 $t(24) = 1.19$, $MS_e = 5.35$, $p > .05$.

Transfer Weekly Words

No significant difference was found between the groups at Week 1 $t(24) = .91$, $MS_e = 1.15$, $p > .05$, or Week 3 $t(24) = .78$, $MS_e = 0.25$, $p > .05$. However, the strategy group outperformed the students in the traditional condition on three occasions: Week 2,

$t(24) = 3.01$, $MS_e = 1.22$, $p < .05$, Week 4, $t(24) = 2.70$, $MS_e = 0.64$, $p < .05$, and Week 5 $t(24) = 2.05$, $MS_e = .74$, $p < .05$.

Learning Gains from Pretest to Immediate Posttest,
and from Pretest to Delayed Posttest

Growth is the amount of learning that has taken place from pretest to posttest. The means and standard deviations used to determine whether or not these differences were significant are listed in Table 3.

For the total words, no significant difference was found between the groups for the immediate posttest from pretest growth score, $t(24) = .31$, $MS_e = 57.13$, $p > .05$, immediate posttest from delayed posttest growth score, $t(24) = .13$, $MS_e = 21.22$, $p > .05$, or delay posttest from pretest growth score $t(24) = .31$, $MS_e = 31.42$, $p > .05$. For the training items, there were no significant differences found between the groups for immediate posttest (training) from pretest (training)

Table 3

Means and Standard Deviations for Pretest, Immediate Posttest, and Delayed Dictated Sentence Spelling Tests Growth Scores as a Function of Experimental Condition

	Strategy Instruction		Traditional Instruction	
	Total Words			
	M	S.D.	M	S.D.
Immediate Posttest - Pretest	14.08	7.33	13.15	7.78
Immediate Posttest - Delayed Posttest	2.38	4.74	2.15	4.47
Delay Posttest - Pretest	11.69	5.57	11.00	5.64
	Training Words			
Immediate Posttest - Pretest	10.62	6.04	10.38	8.62
Immediate Posttest - Delay Posttest	.77	4.85	.38	5.72
Delay Posttest - Pretest	9.85	5.18	10.00	4.56
	Transfer Words			
Immediate Posttest - Pretest	2.69	2.29	2.00	2.20
Immediate Posttest - Delay Posttest	.85	1.57	1.00	1.63
Delay Posttest - Pretest	1.85	1.46	1.00	2.12

growth score, $t(24) = .08$, $MS_e = 55.39$, $p > .05$, or immediate posttest (training) from delay posttest growth score (training), $t(24) = .19$, $MS_e = 28.12$, $p > .05$. At delayed posttest (training) from pretest growth score (training), no significant differences were found between the groups for the training items, $t(24) = .08$, $MS_e = 23.81$, $p > .05$. Finally, for the transfer words, no significant differences were found between the groups for immediate posttest (transfer) from pretest (transfer) growth score, $t(24) = .78$, $MS_e = 5.04$, $p > .05$. As well, no significant differences were found between the groups for immediate posttest (transfer) from delay posttest (transfer) growth score, $t(24) = .24$, $MS_e = 2.56$, $p > .05$, or delay posttest (transfer) from pretest (transfer) $t(24) = 1.19$, $MS_e = 3.31$, $p > .05$.

Secondary Analysis

As in the primary analysis, a priori comparisons were made between the pretest, immediate posttest and delayed posttest scores of the subjects in the strategy and traditional groups to ascertain whether or not a significant performance difference existed between those who received a triad spelling strategy approach versus those who received a traditional spelling instruction method. Comparisons were also made to

assess differences between the "growth" of each group from pretest to posttest. The Dunnett procedure (Kirk, 1982) was used to make these comparisons. For the training items where a directional hypothesis was made that subjects in the strategy instruction group would outperform the subjects in the traditional instruction group, the critical value for all between subjects comparisons was $t(24) = 1.71$. For the transfer items where the direction of the hypothesis was uncertain, then the nondirectional hypothesis was made that subjects in the strategy instruction group and subjects in the traditional instruction group would perform similarly. The critical value for all between subjects comparisons was $t(24) = 2.06$. The critical $t = 2.06$ was used to assess performance differences in the total test score.

The results of the Dunnett procedure will be presented for the pretest, immediate posttest and delayed posttest scores, then the five weekly posttests and the growth score for each group. Distinctions have been made between scores obtained on the total 56-item test score, the 40 training words and the 16 transfer words.

Pretest, Total Posttest and Delayed Posttest

Total Words

Table 4 displays students' means and standard deviations for the total training and transfer words at pretest, immediate posttest and delayed posttest as a function of experimental condition. No significant difference was found between the groups at pretest, $t(24) = .27$, $MS_e = 41.56$, $p > .05$. At immediate posttest, no significant difference was found between the groups, $t(24) = .36$, $MS_e = 58.26$, $p > .05$. Similarly, at the delayed posttest, no significant difference was found between conditions, $t(24) = .78$, $MS_e = 43.03$, $p > .05$.

Training Words

No significant difference was found between the groups at pretest, $t(24) = .59$, $MS_e = 24.97$, $p > .05$. At immediate posttest, no significant difference was found, $t(24) = .27$, $MS_e = 41.41$, $p > .05$. Similarly, at the delayed posttest, no significant difference was found, $t(24) = .15$, $MS_e = 25.91$, $p > .05$.

Table 4

Means and Standard Deviations for Pretest, Immediate Posttest, and Delayed Dictated Sentence Spelling Tests as a Function of Experimental Condition (Word Families #2 and #4 Removed)

		Total	Training	Transfer
Pretest				
Strategy	M	31.54	19.77	11.77
Instruction	S.D.	6.36	4.90	1.96
Traditional	M	32.23	20.92	11.31
Instruction	S.D.	6.53	5.09	1.80
Immediate Posttest				
Strategy	M	42.54	28.62	13.92
Instruction	S.D.	7.58	6.06	1.71
Traditional	M	41.46	29.31	12.15
Instruction	S.D.	7.69	6.79	2.15
Delayed Posttest				
Strategy	M	41.77	28.62	13.15
Instruction	S.D.	5.86	4.79	1.52
Traditional	M	39.77	28.31	11.46
Instruction	S.D.	7.19	5.38	2.37

Transfer Words

No significant difference was found between the groups at pretest, $t(24) = .62$, $MS_e = 3.54$, $p > .05$. At immediate posttest there was a significant difference was found favouring students in the strategy condition, $t(24) = 2.32$, $MS_e = 3.78$, $p < .05$. Similarly, at the delayed posttest, strategy students outperformed traditional instruction students as a significant difference was found, $t(24) = 2.17$, $MS_e = 3.96$, $p < .05$.

Five Weekly Posttests

The results of the Dunnett procedure (Kirk, 1982) will be presented for the five weekly posttests. For each of the posttests on Week 1 and Week 2, the total seven words were divided between five training words and two transfer words. For each weekly posttest on Week 3, Week 4 and Week 5, the 14 words were divided between 10 training words and four transfer words. The means and standard deviations for each weekly test are listed in Table 5 as a function of item type, time and experimental condition.

Once again, the subjects' tests were scored in a consistent fashion: An item was marked wrong if spelled incorrectly or if the spelling were illegible;

Table 5

Means and Standard Deviations for Five Weekly Posttests as a Function of Item Type, Time and Experimental Condition (Word Families #2 and #4 Removed)

		Total	Training	Transfer
Week 1				
Strategy	M	5.54	3.77	1.77
Instruction	S.D.	1.13	.73	.60
Traditional	M	4.15	2.46	1.69
Instruction	S.D.	1.77	1.39	.63
Week 2				
Strategy	M	6.62	4.69	1.92
Instruction	S.D.	.65	.63	.28
Traditional	M	4.92	3.85	1.08
Instruction	S.D.	1.80	1.28	.86
Week 3				
Strategy	M	11.00	7.46	3.54
Instruction	S.D.	1.73	1.51	.52
Traditional	M	11.92	8.23	3.69
Instruction	S.D.	1.55	1.59	.48

Table 5 (continued)

Means and Standard Deviations for Five Weekly Posttests as a Function of Item Type, Time and Experimental Condition (Word Families #2 and #4 Removed)

			Week 4	
Strategy	M	11.00	7.38	3.62
Instruction	S.D.	1.73	1.56	.51
Traditional	M	9.77	7.00	2.77
Instruction	S.D.	2.55	1.96	1.01
			Week 5	
Strategy	M	9.85	6.54	3.31
Instruction	S.D.	3.05	2.57	.75
Traditional	M	10.23	7.62	2.62
Instruction	S.D.	2.49	2.02	.96

item was marked right if spelled correctly. On the weekly posttests, a point was allocated when a word was spelled correctly. No point was given when the spelling was incorrect or if the spelling were illegible.

Total Weekly Words

A significant difference was found between the groups for Week 1 and Week 2 favouring the subjects in the strategy instruction condition, $t(24) = 2.37$, $MS_e =$

2.21, $p < .05$, and $t(24) = 3.19$, $MS_e = 1.83$, $p < .05$, respectively. No significant difference was found between the groups for Week 3, $t(24) = 1.43$, $MS_e = 2.71$, $p > .05$, Week 4, $t(24) = 1.44$, $MS_e = 4.76$, $p > .05$, or Week 5, $t(24) = .35$, $MS_e = 7.75$, $p > .05$.

Training Weekly Words

A significant difference was found between the groups for Week 1, $t(24) = 3.00$, $MS_e = 1.23$, $p < .05$, and Week 2, $t(24) = 2.14$, $MS_e = 1.02$, $p < .05$, favouring students in the strategy instruction group. No significant difference was found between the groups for Week 3, $t(24) = 1.27$, $MS_e = 2.40$, $p > .05$, Week 4, $t(24) = .55$, $MS_e = 3.13$, $p > .05$, or Week 5, $t(24) = 1.19$, $MS_e = 5.35$, $p > .05$.

Transfer Weekly Words

No significant difference was found between the groups at Week 1, $t(24) = .32$, $MS_e = 0.38$, $p > .05$, or Week 3 $t(24) = .78$, $MS_e = 0.25$, $p > .05$. Students in the strategy group outperformed those students in the traditional condition for Week 2, $t(24) = 3.37$, $MS_e = 0.41$, $p < .05$, Week 4, $t(24) = 2.70$, $MS_e = 0.64$, $p < .05$, and Week 5, $t(24) = 2.05$, $MS_e = 0.74$, $p < .05$.

Learning Gains from Pretest to Immediate Posttest,
and from Pretest to Delayed Posttest

Growth is the amount of learning that has taken place from pretest to posttest. The means and standard deviations used to assess learning gains from pretest to immediate posttest, and from pretest to delayed posttest are listed in Table 6.

For the total words, no significant difference was found between the groups for the immediate posttest from pretest growth score, $t(24) = .67$, $MS_e = 45.38$, $p > .05$, immediate posttest from delayed posttest growth score, $t(24) = .58$, $MS_e = 16.31$, $p > .05$, delayed posttest from pretest growth score, $t(24) = 1.47$, $MS_e = 21.81$, $p > .05$. For the training items, there were no significant differences between the groups for immediate posttest from pretest growth score, $t(24) = .09$, $MS_e = 35.71$, $p > .05$, immediate posttest from delayed posttest growth, $t(24) = .70$, $MS_e = 13.16$, $p > .05$, delayed posttest from pretest growth score, $t(24) = .90$, $MS_e = 17.26$, $p > .05$. Finally, for the transfer words for immediate posttest from delayed posttest growth score, $t(24) = .19$, $MS_e = 1.20$, $p > .05$, no significant differences exist between the groups. A result that approaches significance was found favouring the strategy instruction method for immediate posttest

Table 6

Means and Standard Deviations for Pretest, Immediate Posttest, Delayed Dictated Sentence Spelling Test Growth Scores as a Function of Experimental Condition (Word Families #2 and #4 Removed)

	Strategy Instruction		Traditional Instruction	
	Total Words			
	M	S.D.	M	S.D.
Immediate Posttest - Pretest	11.00	7.48	9.23	5.90
Immediate Posttest - Delayed Posttest	.77	4.75	1.69	3.17
Delay Posttest - Pretest	10.23	4.60	7.54	4.74
	Training Words			
Immediate Posttest - Pretest	8.85	5.89	8.38	6.06
Immediate Posttest - Delay Posttest	.00	3.85	1.00	3.39
Delay Posttest - Pretest	8.85	3.80	7.38	4.48
	Transfer Words			
Immediate Posttest - Pretest	2.15	1.91	.85	1.34
Immediate Posttest - Delay Posttest	.77	1.54	.69	1.55
Delay Posttest - Pretest	1.38	1.71	.15	1.21

from pretest growth score, $t(24) = 2.01$, $MS_e = 2.72$, $p > .05$. A significant difference was found between the groups revealing that the strategy instruction group outperformed the traditional instruction group on the delayed posttest from pretest growth score, $t(24) = 2.12$, $MS_e = 2.19$, $p < .05$.

Summary

In summary, no significant differences were found between the strategy instruction group and the traditional instruction group at pretest. For the training words of the initial data analysis, no significant difference was found between the strategy instruction group and the traditional instruction group. When all word families were considered as well as when word families #2 and #4 were removed, a significant difference existed between the strategy instruction group and the traditional instruction group on transfer items at immediate posttest. When all words were analyzed, there was a similar pattern favouring the strategy instruction group over the traditional instruction group at the delayed posttest. When word families #2 and #4 were removed this latter difference was significant. In all cases, the strategy group outperformed the students in the traditional

condition for the transfer items on three weekly posttests. Yet, with word families #2 and #4 removed, the strategy groups' total scores and training scores were significantly better than the traditional groups' on two weekly posttests. Finally, when learning growth was measured from pretest to delayed posttest, the strategy instruction group significantly outperformed the traditional instruction group with respect to correctly spelling transfer items. Similarly, there was a descriptive advantage for the strategy group when learning gains were measured between immediate posttest and pretest for transfer items.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, IMPLICATIONS

This study compared the effectiveness of a triad explicit strategy approach and a traditional instructional approach for improving Grade 8 students' spelling performances. From this comparison, results were generated that are both contradictory to the literature and supportive of previous findings. Inconsistent with the literature, no significant difference existed between the strategy instruction group and the traditional instruction group for the training items. The explicit strategy instruction method was just as effective as the traditional instruction method. This result was evident at the immediate posttest, the delayed posttest, and the weekly posttests.

There are a few possible explanations for the lack of difference between the two methods on the training items. The first explanation centres around the grade level of the subjects. Presumably, Grade 8 students will have developed some learning strategies through their years of schooling experience (e.g., repetition and review). Some of these strategies may have competed with those being introduced to the strategy instruction subjects. Alternatively, some of these

strategies may have advantageously been employed by the traditional instruction group.

Second, the exercises and repetition that the traditional instruction group received were exceptional. The variety of presentation formats and frequent experimenter feedback were exemplary instances of the traditional teaching approach. For instance, a typical unit in Spelling in Language Arts (Kuska, Webster, Elford & Lewis, 1977) highlights 25 words and contains short exercises that focus on background meanings, searching for words or building new derivatives.

The strategy instruction group performed significantly better than the traditional instruction group for the transfer item words on the immediate posttest and three out of the five weekly posttests and on the delayed posttest (when circumspect word families were removed). These findings suggest that the strategy users were equipped with the "know how" (i.e., metacognitive skills) to generalize their learning from the training words to the transfer items. For example, the word "night" rhymes with "flight," "sight," and "light" and all four of these words have the same ending, "i-g-h-t. By contrast, the traditional instruction group was ill-equipped to do so as they had only experienced repeated practice with the training

words.

Additionally, the strategy instruction group outperformed the traditional instruction group on two out of the five weekly posttests for the total and training words. On measures of growth, the strategy instruction group significantly improved on the transfer item words from pretest to delayed posttest and approximated a significant growth from pretest to immediate posttest. Again, these findings support the conclusion that the strategy instruction group were able to transfer strategy knowledge to new situations, especially as the time between spelling training and the tests increased. This finding is similar to those reported by Englert et al. (1985) who found that direct instruction in an analogy strategy with transfer words assisted mildly handicapped students in spelling new words that rhymed with transfer words.

This finding is also consistent with those reported by Kernaghan and Woloshyn (1995) who found that the provision of metacognitive information was essential for effective spelling strategy instruction. It is also consistent with those found by Invernizzi et al., (1994) which states that when students are guided to examine the similarities and differences in spelling patterns, the students recognize that they can employ prior word knowledge when spelling unfamiliar words.

Similarly, Anderson (1985) found that good spellers use an analogy strategy with known words whereas poor spellers have a limited number of useful strategies.

Future Research

Because of the simultaneous delivery of the strategy triad, it is difficult to isolate the specific contributions of each strategy. Thus, the marriage of the three strategies must be viewed as the responsible party for affecting student performance and not any one specific strategy.

Support for the efficacy of each of the strategies of error correction, imagery and analogy may be united to support this marriage or union between the three strategies. For instance, Radebaugh (1985) found that good spellers used strategies such as visual imagery and remembering hard spots. When focused on spelling errors, even learning-disabled students could transfer learned elements to rhyming lists of words (Gerber & Lydiatt, 1984). Even upper elementary students have been found to benefit in the form of positive spelling performance and retention with the guidance of a mental imagery strategy as compared to simply a drill and practice method (Caban et al., 1978). It stands to reason that the benefits of each of these three strategies (error correction, imagery and analogy)

would be sustained in the present triad application of this study. However, a future research pursuit could be to dismember this triad of spelling strategies and attempt to isolate the effects of the individual strategies with Grade 8 students (albeit there is substantial evidence to support the use of each strategy with younger students). To extend the generalizability of the results, a larger sample size of multi-grade level students from a greater diversity of backgrounds could be used. These students were drawn from a single geographic locale, thus to expand the findings a sampling from several regions could be selected.

The materials employed for this study could be more sensitive to the individual differences of students. In future research it would be optimal to complete baseline and post-treatment standardized assessments to track individual student growth. The baseline statistics could also be used to tailor the word lists to each student's spelling ability. The notion of individualized spelling instruction is emphasized by Woloshyn and Pressley (1990) who stated that spelling instruction should be planned, monitored, and modified on the basis of each student's performance.

Educational Implications

The findings of this study revealed that strategy instruction in spelling is comparable to traditional instruction methods in the teaching of a given list of words. The fact that strategy instruction may be perceived as more enjoyable by the students is an important consideration. At the completion of the study, students in the strategy instruction group were noted as making comments that the activities were fun and that it did not seem like we were doing spelling. Thus, for the teaching of target words, traditional techniques and strategy instruction are equally effective and provide teachers with alternative methods. However, the major finding of this research is that the method of strategy instruction allows students to transfer their knowledge learning across situations. This application process or generalization of skills is what sets the strategy instruction method apart from the tradition instruction method.

In applying these given findings to the classroom, a few practical points are noteworthy. For example, since spelling accuracy varies from student to student, learning strategies should accompany an instructional management plan in which the teacher could monitor and chart student progress as well as the effectiveness of certain strategies for certain students (Dangel, 1990).

Each student's spelling instructional level should be determined with a developmental spelling inventory or pretest(s) of units from basal spellers.

The teacher should also attend to the selection of the spelling words. Novelli (1993) advocated that spelling words for lessons be those words that are important to each student, instead of words that the teacher picks. This way, the students have reason to learn and use the words, not just memorize them for a test. In addition to Novelli's suggestions, Graham, Harris and Loynachan (1994) proposed that spelling lessons not only include words that students misspell in their writing but also incorporate words they are most likely to use when writing. Graham et al. (1994) presented a list of 335 high-frequency writing words.

Gerber and Lydiatt (1984) concluded that there is no "best" method of teaching spelling that is equally effective for all students as individuals learn differently and at different rates. Scott (1993) stated that the ultimate goal is for each student to develop a bank of spelling strategies which he or she can draw upon as specific instances of need occur. As educators, we must replace the ineffective spelling strategies that poor spellers use with more effective ones, while allowing enough time for them to

consolidate these new strategies. Scott (1993) also cautioned that spelling strategies should not be presented as static exercises but as tools students can use as they approach a challenging word to spell. Teachers must accept the responsibility of underscoring the importance of correct spelling in both practical and social situations, and instilling pride in correct spelling (Graham & Voth, 1990). This is the charge to all members of the educational community.

REFERENCES

- Allred, R. (1990). Gender differences in spelling achievement in Grades 1 through 6. Journal of Educational Research, 83(4), 187-193.
- Anderson, K. (1985, November). The development of spelling ability and linguistic strategies. The Reading Teacher, 140-147.
- Baillet, L. (1990). Spelling rule usage among students with learning disabilities and normally achieving students. Journal of Learning Disabilities, 23(2), 121-128.
- Ball, E., & Blachman, B. (1991). Does phoneme awareness training in kindergarten make a difference in early word recognition and developmental spelling? Reading Research Quarterly, 26(1), 49-66.
- Block, K., & Peskowitz, N. (1990). Metacognition in spelling: Using writing and reading to self-check spellings. The Elementary School Journal, 91(2), 151-164.
- Bradley, J., & King, P. (1992). Effects of proofreading on spelling: How reading misspelled and correctly spelled words affects spelling accuracy. Journal of Reading Behavior, 24(4), 413-432.
- Brown, K. (1993). Decoding by analogy: Promoting independent strategies for generating spellings during writing. Paper presented at the National Reading Conference, Charleston, SC.
- Byrne, B., & Fielding-Barnsley, R. (1991). Evaluation of a program to teach phonemic awareness to young children. Journal of Educational Psychology, 83(4), 451-455.
- Caban, J., Hambleton, R., Coffing, D., Conway, M., & Swaminathan, H. (1978). Mental imagery as an approach to spelling instruction. Journal of Experimental Education, 46(3), 15-21.
- Carpenter, D. (1983). Spelling error profiles of able and disabled readers. Journal of Learning

Disabilities, 16(2), 102-104.

- Carpenter, D., & Miller, L. (1982). Spelling ability of reading disabled LD students and able readers. Learning Disability Quarterly, 5, 65-70.
- Chittenden, M. (1984). Teaching spelling by syllables. The Clearing House, 57, 309-312.
- Cramer, R. (1969). The influence of phonic instruction on spelling achievement. The Reading Teacher, 22(6), 499-503.
- Dangel, H. (1989). The use of student directed spelling strategies. Academic Therapy, 25(1), 43-51.
- Dixon, R. (1991). The application of sameness analysis to spelling. Journal of Learning Disabilities, 24(5), 285-291.
- Drake, D., & Ehri, L. (1984). Spelling acquisition: Effects of pronouncing words on memory for their spellings. Cognition and Instruction, 1(3), 297-320.
- Ehri, L., Gibbs, A., & Underwood, T. (1988). Influence of errors on learning the spellings of English words. Contemporary Educational Psychology, 13, 236-253.
- Englert, C., Hiebert, E., & Stewart, S. (1985). Spelling unfamiliar words by an analogy strategy. The Journal of Special Education, 19(3), 291-306.
- Foorman, B., Francis, D., Novy, D., & Liberman, D. (1991). How letter-sound instruction mediates progress in first grade reading and spelling. Journal of Educational Psychology, 83(4), 456-469.
- Frith, U. (1980). Cognitive processes in spelling. London: Academic Press.
- Fulk, B.M., & Stormont-Spurgin, M. (1995). Spelling interventions for students with disabilities: A review. The Journal of Special Education, 28(4), 488-513.
- Gentry, J. (1984). Developmental aspects of learning to spell. Academic Therapy, 20(1), 11-19.
- Gerber, M. (1986). Generalization of spelling

- strategies by LD students as a result of contingent imitation/modeling and mastery criteria. Journal of Learning Disabilities, 19(9), 530-537.
- Gerber, M., & Lydiatt, S. (1984). Research and practice in teaching spelling. Academic Therapy, 20(1), 5-10.
- Gettinger, M. (1993). Effects of error correction on third graders' spelling. Journal of Educational Research, 87(1), 39-45.
- Glenn, P., & Hurley, S.R. (1993). Preventing spelling disabilities. Child Language Teaching and Therapy, 9(1), 1-12.
- Graham, S., & Freeman, S., (1986). Strategy training and teacher vs. student-controlled study conditions: Effects on LD students' spelling performance. Learning Disability Quarterly, 9, 15-22.
- Graham, S., Harris, K., & Loynachan, C. (1994). The spelling for writing list. Journal of Learning Disabilities, 27(4), 210-214.
- Graham, S., & Voth, V. (1990). Spelling instruction: Making modifications for students with learning disabilities. Academic Therapy, 25(4), 447-457.
- Griffith, P., Klesius, J., & Kromrey, J. (1992). The effect of phonemic awareness on the literacy development of first grade children in a traditional or a whole language classroom. Journal of Research in Childhood Education, 6(2), 85-92.
- Griffith, P. (1991). Phonemic awareness helps first graders invent spellings and third graders remember correct spellings. Journal of Reading Behavior, 23(2), 215-233.
- Harris, K., Graham, S., & Freeman, S. (1988). Effects of strategy training on metamemory among learning-disabled students. Exceptional Children, 54(4), 332-338.
- Invernizzi, M., Abouzeid, M., & Gill, J. T. (1994). Using students' invented spellings as a guide for spelling instruction that emphasizes word study. The Elementary School Journal, 95(2), 155-167.
- Ireland, R. (1978). The macmillan spelling series 8. Toronto: Macmillan Company.

- Kauffman, J., Hallahan, D., Haas, K., Brame, T., & Boren, R. (1978). Imitating children's errors to improve their spelling performance. Journal of Learning Disabilities, 11(4), 33-38.
- Kernaghan, K., & Woloshyn, V. (1995). Providing grade one students with multiple spelling strategies: Comparisons between strategy instruction, strategy instruction with metacognitive information, and traditional language arts. Applied Cognitive Psychology, 9, 157-166.
- Kirk, R.E. (1982). Experimental design (2nd Ed.). Belmont, CA: Brooks/Cole.
- Kuska, A., Webster, E., Elford, G., & Lewis, R. (1977). Spelling in language arts 8. Toronto: Nelson.
- Lesiak, J., Lesiak, W., & Kirchheimer, J. (1979). Auditory and visual factors related to spelling success. Psychology in the Schools, 16(4), 491-494.
- Lennox, C., Siegel, L. (1993). Visual and phonological spelling errors in subtypes of children with learning disabilities. Applied Psycholinguistics, 14, 473-488.
- Liberman, I, Shankweiler, D., Fischer, F., & Carter, B. (1974). Explicit syllable and phoneme segmentation in the young child. Journal of Experimental Child Psychology, 18, 201-212.
- Lundberg, I, Frost, J., & Petersen, O. (1988). Effects of an extensive program for stimulation of phonological awareness in preschool children. Reading Research Quarterly, 23(3), 263-284.
- MacLeod, J., & Greenough, P. (1980). The importance of sequencing as an aspect of short-term memory in good and poor spellers. Journal of Learning Disabilities, 13(5), 255-261.
- Novelli, J. (1993, May/June). Strategies for spelling success. Instructor. 41-47.
- Olson, M., Logan, J., & Lindsey, T. (1988). Orthographic awareness and gifted spellers: Early experiences and practices. Roeper Review, 10(3), 152-155.
- Ormrod, J. (1985). Visual memory in a spelling matching task: Comparison of good and poor

- spellers. Perceptual and Motor Skills, 61, 183-188.
- Ormrod, J. (1986). A learning strategy for phonetic spellers. Academic Therapy, 22(2), 195-198.
- Perin, D. (1982). Spelling strategies in good and poor readers. Applied Psycholinguistics, 3, 1-14.
- Radaker, L. (1963). The effect of visual imagery upon spelling performance. The Journal of Educational Research, 56(7), 370-372.
- Radebaugh, M. (1985, February). Children's perceptions of their spelling strategies. The Reading Teacher, 532-536.
- Richgels, D. (1986). An investigation of preschool and kindergarten children's spelling and reading abilities. Journal of Research and Development in Education, 19(4), 41-47.
- Rieth, H., Hathaway, F., Axelrod, S., Wood, K., Anderson, R., & Fitzgerald, C. (1974). Influence of distributed practice and daily testing on weekly spelling tests. The Journal of Educational Research, 68, 73-77.
- Rule, R. (1982). The spelling process: A look at strategies. Language Arts, 59(4), 379-384.
- Schlagal, R., & Schlagel, J. (1992). The integral character of spelling: Teaching strategies for multiple purposes. Language Arts, 69, 418-424.
- Schwartz, S. (1983). Spelling disability: A developmental linguistic analysis of pattern abstraction. Applied Psycholinguistics, 4, 303-316.
- Scott, R. (1991). Spelling and reading strategies of seventh grade good readers/good spellers, good readers/poor spellers, and poor readers/poor spellers. Paper presented for doctoral dissertation, Ontario Institute for Studies in Education, Toronto, Ont.
- Scott, R. (1993). Spelling: Sharing the secrets. Toronto: Gage Educational Publishing Co.
- Scott, R., & Siamon, S. (1994). Sharing the secrets: Teach your child to spell. Toronto: Macmillan.
- Sears, N., & Johnson, D. (1986). The effects of visual

- imagery on spelling performance and retention among elementary students. Journal of Educational Research, 79(4), 230-233.
- Smith, H. (1975). Teaching spelling. British Journal of Educational Psychology, 45, 68-75.
- Snyder, B., & Pressley, M. (1990). Spelling. In M. Pressley and Associates (Eds). Cognitive strategy instruction that really improves children's academic performance (pp. 7-26). Cambridge: Brookline Books.
- Spencer, F., Snart, F., & Das, J. (1989). A process-based approach to the remediation of spelling in students with reading disabilities. The Alberta Journal of Educational Research, 35(4), 269-282.
- Sterling, C., & Rusby, S. (1986). Evidence for the morphemic spelling of novel derivatives by 12-year-old children. First Language, 6(17, Pt 2), 133-147.
- Swanson, H., & Ramalgia, J. (1992). The relationship between phonological codes on memory and spelling tasks for students with and without learning disabilities. Journal of Learning Disabilities, 25(6), 396-407.
- Tangel, D., & Blachman, B. (1992). Effect of phoneme awareness instruction on kindergarten children's invented spelling. Journal of Reading Behavior, 24(2), 233-261.
- Thomas, V., & Braun, C. (1979). The Canadian spelling program 8. Toronto: Gage Publishing Limited.
- Treiman, R., Berch, D., & Weatherston, S. (1993). Children's use of phoneme-grapheme correspondences in spelling: Roles of position and stress. Journal of Educational Psychology, 85(3), 466-477.
- van Oudenhoven, J. P., van Berkum, G., & Swen-Koopmans, T. (1987). Effect of cooperation and shared feedback on spelling achievement. Journal of Educational Psychology, 79(1), 92-94.
- Weiner, S. (1994). Four first graders' descriptions of how they spell. The Elementary School Journal, 94(3), 315-330.
- Woloshyn, V.E., & Pressley, M. (1990). Spelling. In M. Pressley and Associates (Eds). Cognitive

strategy instruction that really improves children's academic performance (pp. 81-116). Cambridge: Brookline Books.

Wong, B. (1986). A cognitive approach to teaching spelling. Exceptional Children, 53(2), 169-173.

Yee, A. (1969). Is the phonetic generalization hypothesis in spelling valid? The Journal of Experimental Education, 37(4), 82-91.

Zutell, J. (1975). Spelling strategies of primary school children and their relationship to Piaget's concept of decentration. Research in the Teaching of English, 13(1), 69-80.

APPENDIX A

"Improving Grade 8 students spelling performance
with a triad strategy approach"

Dear Parents:

As the final requirement of my Master's Degree in Education, I would like to examine the effects of a combination of three instructional strategies on the spelling performance of Grade 8 students. Current research finds that to improve spelling performance students need a bank of spelling strategies which they can withdraw from for specific needs. I wish to equip your child with a few of these strategies. The purpose of this letter is to request your permission for your child to participate in this study.

The entire class will be participating in dictated spelling pretests and posttests. Small groups of students will be seen by me for 30-40 minute sessions over 5 weeks. In each session, students will receive instruction regarding the use of three spelling strategies or complete language arts activities. All of the students will be given cumulative posttests at the end of the study.

In the past, activities like these have been found to improve students' spelling performances. Many prior studies have focused on a few isolated approaches and largely with younger children. This study will attempt to integrate three learning strategies and explicitly teach them to a scarcely studied population, Grade 8 students.

In general, children enjoy participating in these types of sessions. However, if for any reason a child indicates that he/she does not wish to continue, the student will be removed from the study immediately. Students' names will not appear on any of the data collected in this study, nor will any student's status in the classroom be affected by his/her decision to participate in this study.

This study has been officially approved by the Lincoln County Separate Board of Education and Brock University. When the study is complete, a report on the findings will be made available to all parents. The students will be told about effective ways to improve their spelling.

Please return the attached consent form to the school as soon as possible indicating whether you give your permission for your son/daughter to participate in the study. Please note that it is important that you return the form in either case. If you have any questions or concerns about this study, please feel free to contact me at home (905-563-1578), or my thesis advisor, Dr. Vera Woloshyn, Ph.D. (905-685-5550, ext. 3340).

Thank you,

Tiffany Gallagher

"Improving Grade 8 students' spelling performance
with a triad strategy approach"

CONSENT FORM

Student's Name: _____

CHECK HERE

[] I give permission for my child to participate in the study.
I understand that my child may receive instruction about
effective spelling strategies, information about when to use
these strategies, or traditional spelling and language arts
instruction.

[] I DO NOT give permission for my child to participate in the
study.

Signature of parent: _____

Date: _____

If you would like a complete summary of the findings of this study,
please complete the form below:

Name: _____

Address: _____

DICTATED WORD SPELLING TEST

WORD FAMILY #1

1. **narrative**
2. **decorative**
3. **figurative**
4. **comparative**
5. **imperative**
6. negative
7. relative

WORD FAMILY #2

1. **deceive**
2. **receive**
3. **perceive**
4. **conceit**
5. **preconceive**
6. conceive
7. deceit

WORD FAMILY #3

1. **insurance**
2. **entrance**
3. **assurance**
4. **remembrance**
5. **appearance**
6. clearance
7. fragrance

WORD FAMILY #4

1. **efficient**
2. **sufficient**
3. **deficient**
4. **ancient**
5. **proficient**
6. odedient
7. ingredient

WORD FAMILY #5

1. **feature**
2. **creature**
3. **miniature**
4. **temperature**
5. **literature**
6. nature
7. signature

WORD FAMILY #6

1. **achievement**
2. **requirement**
3. **amusement**
4. **advertisement**
5. **measurement**
6. excitement
7. settlement

WORD FAMILY #7

1. **precious**
2. **unconscious**
3. **suspicious**
4. **spacious**
5. **gracious**
6. delicious
7. atrocious

WORD FAMILY #8

1. **possession**
2. **impression**
3. **profession**
4. **procession**
5. **expression**
6. session
7. depression

WORD FAMILY #9

1. **patience**
2. **audience**
3. **conscience**
4. **convenience**
5. **experience**
6. patience
7. science

WORD FAMILY #10

1. **association**
2. **pronunciation**
3. **negotiation**
4. **appreciation**
5. **aviation**
6. mediation
7. initiation

NOTE: **Target/training words are in bold-face type.** Transfer words appear in normal type.

APPENDIX C

DELAYED SENTENCE SPELLING TEST

1. It is imperative that you make the best impression.
2. Narrative writing is a type of literature.
3. It is a requirement that you drink sufficient water.
4. The clown managed to deceive the audience.
5. The ceremony was in remembrance of the aviation pilots who died in the war.
6. I could not conceive of a more spacious room.
7. The lady had a most gracious appearance.
8. The bones were of some unknown ancient creature.
9. The advertisement was for decorative wallpaper.
10. Figurative language is an expression in writing.
11. There was a procession of people from the entrance to the altar.
12. The convenience store has comparative prices.
13. She has experience in that profession.
14. The French student was quite proficient in English pronunciation.
15. The negotiation between the nations was a great achievement.
16. My conscience needs constant assurance that everything is fine.
17. His high body temperature left the man unconscious.
18. That is an efficient unit of measurement.
19. I will preconceive what feature will be changed.
20. Miniature horses were at the amusement park.
21. I perceive that you are suspicious of my work.

22. The lady will receive a gift in appreciation for her help.
23. The plant was deficient in precious water.
24. Her patience was amazing when he broke her prized possession.
25. They belong to an association for insurance companies.
26. Please add more of that delicious ingredient.
27. Her negative mood was like depression.
28. The dog was obedient after going to obedience school.
29. The settlement between them came after much mediation.
30. There was great excitement at the clearance sale.
31. To show conceit is a part of her nature.
32. Part of the initiation includes a session with the leader.
33. The forged signature was an act of deceit.
34. My relative has the most wonderful fragrance.
35. The bomb was an atrocious invention of science.

APPENDIX D

TRADITIONAL SPELLING EXERCISES

Lesson #1

The subjects in the control group will be given back their marked 50-word spelling pre-test. The students will review their misspelled words by writing out the correct spelling of the word five times.

Lesson #2

The subjects in the control group will use each of their misspelled words in the context of a sentence.

Lesson #3

All 50 words will be scrambled for the control group subjects to unscramble.

- | | | |
|-------------------|-----------------|------------------|
| 1. rarnavite | 6. eevdice | 11. cnaursnie |
| 2. eetoracivd | 7. reveeci | 12. cnartnee |
| 3. terugafivi | 8. cevpeire | 13. essucanra |
| 4. aripcoatmve | 9. tencio | 14. brenemramce |
| 5. imeiratevp | 10. pceconrevie | 15. aepearancp |
| 16. ifticeenf | 21. terfuae | 26. vchieaement |
| 17. fufsitienc | 22. ctreaure | 27. retuimerenq |
| 18. tefiniectf | 23. miiatnure | 28. tmusemena |
| 19. nncieat | 24. rtepmeratue | 29. averdimesent |
| 20. crofipient | 25. ritelature | 30. msaeuretenm |
| 31. srecioup | 36. sossepsion | 41. catienpe |
| 32. cnconsuisuo | 37. pmiresnios | 42. auciende |
| 33. sispucious | 38. pforesoism | 43. cocscienne |
| 34. siacpous | 39. pcoression | 44. coeveniencn |
| 35. cragious | 40. esprexsion | 45. ecperienxe |
| 46. ascosiation | | |
| 47. tronunciapion | | |
| 48. nngotiatioe | | |
| 49. acprepiation | | |
| 50. atiavion | | |

Lesson #4

Fill in the missing letters:

96

- | | | |
|-------------------|-----------------|-------------------|
| 1. na_rati_e | 6. dec_ive | 11. _nsur_nce |
| 2. de_ora_ive | 7. rece_ve | 12. entra_ce |
| 3. figu_ativ_ | 8. percei_e | 13. assuran_e |
| 4. com_arat_ve | 9. con_ei | 14. rem_mbranc_ |
| 5. imper_tive | 10. pr_conceiv_ | 15. appea_ance |
| 16. eff_ci_nt | 21. f_ature | 26. achi_vem_nt |
| 17. suffi_ient | 22. crea_ure | 27. req_irem_nt |
| 18. deficie_t | 23. miniatur_ | 28. amu_emen_ |
| 19. ancien_ | 24. temp_r_ture | 29. adve_tis_ment |
| 20. prof_cient | 25. li_erat_re | 30. me_sur_ment |
| 31. prec_ous | 36. pos_es_ion | 41. pati_nce |
| 32. unconsci_us | 37. impress_n | 42. aud_ence |
| 33. suspicio_s | 38. profess_on | 43. conscie_ce |
| 34. spa_ious | 39. pro_ession | 44. c_nveni_nce |
| 35. graciou_ | 40. expres_ion | 45. exp_rie_ce |
| 46. assoc_ation | | |
| 47. pronunci_tion | | |
| 48. neg_tiati_n | | |
| 49. ap_reciatio_ | | |
| 50. avi_tio_ | | |

Lesson #5

Correct the spelling errors in these words:

- | | | |
|-------------------|-----------------|-------------------|
| 1. narritive | 6. diceive | 11. ensurance |
| 2. decorativ | 7. recieve | 12. entrence |
| 3. figarative | 8. perceiv | 13. asurance |
| 4. comperative | 9. con-cei | 14. remembrance |
| 5. emperative | 10. perconceive | 15. appearence |
| 16. ifficient | 21. feture | 26. acheivement |
| 17. suficient | 22. creecture | 27. requirment |
| 18. defecient | 23. minature | 28. amuzement |
| 19. anchient | 24. temprature | 29. advertisemant |
| 20. profishient | 25. literiture | 30. measurment |
| 31. presious | 36. posession | 41. patiance |
| 32. unconshious | 37. impresson | 42. oudience |
| 33. suspisous | 38. profesion | 43. conscence |
| 34. spacius | 39. prosession | 44. conveniense |
| 35. gracous | 40. experssion | 45. experence |
| 46. asociation | | |
| 47. pronunceation | | |
| 48. negotiaton | | |
| 49. appreciasion | | |
| 50. aviatin | | |

ERROR CORRECTION WITH CLOZE PROCEDURE

Researcher prompts:

After I return your spelling tests, please mark each word out of the number of correct letters in the word and make corrections by leaving blanks for misspelled letters. Here are some examples of what I would like you to do:

YOUR SPELLING	CORRECT SPELLING	CORRECTION	SCORE
flard	flared	flar _ d	5/6
nieghbour	neighbour	n _ _ ghbour	7/9
nigth	night	nig _ _	3/5
quitly	quietly	qui _ tly	6/7
truely	truly	tru <u>e</u> ly	4/5
missted	missed	mis <u>s</u> ted	5/6
beacuse	because	be _ c _ use	5/7
nerves	nervous	nerv _ _ s	5/7

Please raise your hand if you require assistance in marking your spelling test words. When you are finished begin to look at the blanks that you left for the misspelled letters. These blanks represent your hard spot for the spelling word. By correcting your own spelling tests you will be able to compare your misspellings to correct spellings. By using the blanks and identifying your personal hard spot you will remember that you need to pay special attention to certain letters in words.

This correct-your-own-test strategy and the cloze procedure were adapted from:

Scott, Ruth. (1993). Spelling: Sharing the Secrets. Toronto: Gage Educational Publishing Company.

APPENDIX F

IMAGERY STRATEGY

Researcher prompts:

As you study each word I would like you to pay special attention to the sequence of the letters in the word. Say the word to yourself and then close your eyes and try to imagine the word being typed letter by letter via a keyboard on to a computer monitor. Visualize each letter of the word printed brightly on the screen and try to hold this mental image for as long as you can. Now cover the word and try to write it by retrieving your visual image. Check your spelling and if the word is misspelled begin again with the typing of each letter on to the computer monitor. This imagery technique will help you in remembering the correct spellings of words. You should use the imagery technique whenever you are studying spelling words.

This imagery strategy was adapted from:

Woloshyn, V.E. and Pressley, M. (1990). Spelling. In M. Pressley and Associates (Eds). Cognitive Strategy Instruction that Really Improves Children's Academic Performance (pp. 81-116). Cambridge: Brooklin Books.

APPENDIX G

ANALOGY STRATEGY

Researcher prompts:

This strategy will provide you with a way to help you write your spelling words correctly on the next test and in your future writing. Look at your spelling words and compare them to the rhyming words that I have compiled for you. When two words rhyme, the last part of the words often are spelled the same. By remembering the similarities between your word and its analogy word you will be able to recall its correct spelling. Notice the familiar letter pattern of the rhyming analogy words match that of your spelling word. Here are some examples:

YOUR WORD	ANALOGY WORDS
<u>flared</u>	<u>prepared</u> , <u>dared</u>
<u>while</u>	<u>file</u> , <u>mile</u>
<u>thought</u>	<u>fought</u> , <u>bought</u>

When you are required to spell a word, recall the shared letter pattern that it has with another word.

This analogy strategy was adapted from:

Woloshyn, V.E. and Pressley, M. (1990). Spelling. In M. Pressley and Associates (Eds). Cognitive Strategy Instruction that Really Improves Children's Academic Performance (pp. 81-116). Cambridge: Brooklin Books.